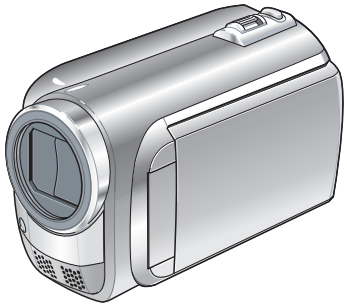
JVC

SERVICE MANUAL

CAMCORDER

GZ-HD300AEK, GZ-HD300AER, GZ-HD300AEU, GZ-HD300AEZ, GZ-HD300BEK, GZ-HD300BER, GZ-HD300BEU, GZ-HD300BEZ, GZ-HD300REK, GZ-HD300RER, GZ-HD300REU, GZ-HD300REZ, GZ-HD320BEK, GZ-HD320BER, GZ-HD320BEU, GZ-HD320BEZ



GZ-HD300AEKM,GZ-HD300AERM,GZ-HD300AEUM,GZ-HD300AEZM,
GZ-HD300BEKM,GZ-HD300BERM,GZ-HD300BEUM,GZ-HD300BEZM,
GZ-HD300REKM,GZ-HD300RERM,GZ-HD300REUM,GZ-HD300REZM, [M9H412]
GZ-HD320BEKM,GZ-HD320BERM,GZ-HD320BEUM,GZ-HD320BEZM [M9H416]

Lead free solder used in the board (material : Sn-Ag-Cu, melting point : 219 Centigrade)

TABLE OF CONTENTS

1 PRECAUTIONS 1-3
2 SPECIFIC SERVICE INSTRUCTIONS 1-5
3 DISASSEMBLY 1-9
4 ADJUSTMENT 1-20
5 TROUBLE SHOOTING 1-24

COPYRIGHT © 2009 Victor Company of Japan, Limited

No.YF307<Rev.003>
2009/7

SPECIFICATION

General	Power supply		DC 11 V (Using AC adapter) DC 7.2 V (Using battery pack)
	Power consumption		Approx. 3.5W* * When the LED light is off and the monitor backlight is set to [STANDARD] mode.
	Dimensions (W × H × D)		53 mm × 68 mm × 113 mm
	Weight		Approx. 325 g Approx. 370 g (incl. battery pack)
	Operating temperature		0°C to 40°C
	Storage temperature		-20°C to 50°C
	Operating humidity		35% to 80%
Camera/LCD monitor	Pickup		1/4.1" (3,050,000 pixels) progressive CMOS
	Lens		F 1.9 to 3.2, f = 2.9 mm to 58.0 mm, 20:1power zoom lens
	Filter diameter		Ø30.5 mm
	LCD monitor		2.7" diagonally measured, LCD panel/TFT active matrix system
	LED Light		Within 1.5 m (recommended shooting distance)
Connectors	AV output	Video output	1.0 V (p-p), 75 Ω
		Audio output	300 mV (rms), 1 kΩ
	HDMI		HDMI™ (V.1.3 with x.v.Color™)
	Component output		Y, Pb, Pr component output Y:1.0V (p-p), 75 Ω Pb/Pr:700 mV (p-p), 75 Ω
	USB		Mini USB type A and type B,USB 2.0 compliant
AC Adapter	Power requirement		AC 110 V to 240, 50 Hz/60 Hz
	Output		DC 11 V, 1 A
Remote Control	Power supply		DC 3 V
	Battery life		Approx. 1 year (depending on the frequency of use)
	Operating distance		Within 5 m
	Operating temperature		0°C to 40°C
	Dimensions (W × H × D)		42 mm × 14.5 mm × 91 mm
	Weight		Approx. 30 g (incl. battery)
Still image	Format		JPEG
	Image size		1920 × 1080, 1440 × 1080, 640 × 480
	Image quality		FINE/STANDARD
Video	Signal format		1080/50i
	Recording/Playback format	Video	MPEG-4 AVC/H.264
		Audio	Dolby Digital (2ch)
	Recording mode (video)		UXP: VBR, avarage of 24 Mbps XP: VBR, avarage of 17 Mbps SP: VBR, avarage of 12 Mbps EP: VBR, avarage of 5 Mbps
	Recording mode (audio)		48 kHz, 256 kbps

Design and specifications subject to change without notice.

SECTION 1
PRECAUTIONS

1.1 SAFETY PRECAUTIONS

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold.However,in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

1.1.1 Precautions during Servicing

(1) Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product.When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

(2) Parts identified by the ⚠symbol and shaded ( ) parts are critical for safety.
Replace only with specified part numbers.

NOTE :
Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

(3) Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

(4) Use specified internal wiring. Note especially:
- Wires covered with PVC tubing
- Double insulated wires
- High voltage leads

(5) Use specified insulating materials for hazardous live parts. Note especially:
- Insulation Tape
- PVC tubing
- Spacers
- Insulation sheets for transistors
- Barrier

(6) When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

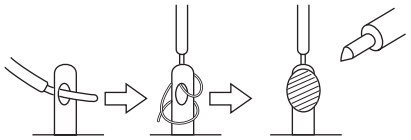


Fig.1-1-1

(7) Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

(8) Check that replaced wires do not contact sharp edged or pointed parts.

(9) When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

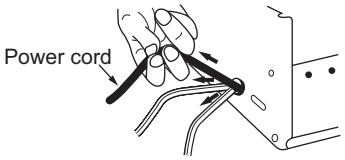


Fig.1-1-2

(10) Also check areas surrounding repaired locations.

(11) Products using cathode ray tubes (CRTs)In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits.Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

(12) Crimp type wire connectorIn such cases as when replacing the power transformer in sets where the connections between the power cord and power trans former primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
- **Connector part number** :E03830-001
- **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
- **Replacement procedure**
  a) Remove the old connector by cutting the wires at a point close to the connector.Important : Do not reuse a connector (discard it).

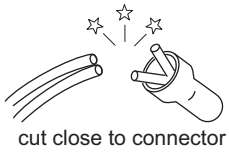


Fig.1-1-3

b) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

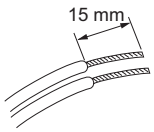


Fig.1-1-4

c) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

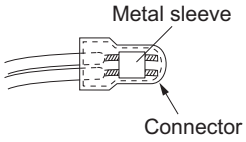


Fig.1-1-5

d) As shown in Fig.1-1-6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

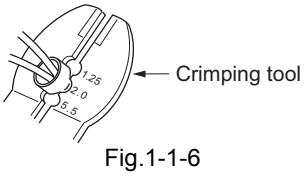


Fig.1-1-6

e) Check the four points noted in Fig.1-1-7.

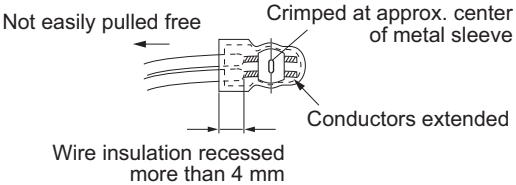

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.1-1-7

1.1.2 Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

(1) Insulation resistance test
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).See table 1 below.

(2) Dielectric strength test
Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See Fig.1-1-11 below.

(3) Clearance distance
When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See Fig.1-1-11 below.

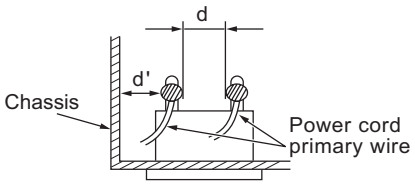


Fig.1-1-8

(4) Leakage current test
Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
Measuring Method : (Power ON)Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig.1-1-9 and following Fig.1-1-12.

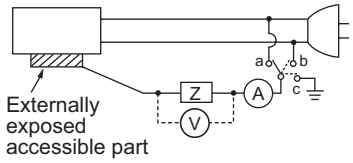
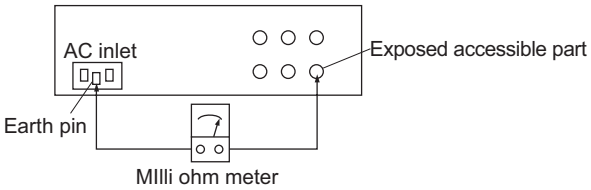


Fig.1-1-9

(5) Grounding (Class 1 model only)
Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).Measuring Method:
Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See Fig.1-1-10 and grounding specifications.



Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

Fig.1-1-10

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦R≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Fig.1-1-11

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Fig.1-1-12

NOTE :
These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 DIFFERENCE LIST

The following table indicate main different points between models GZ-HD300AEK, GZ-HD300AER, GZ-HD300AEU, GZ-HD300AEZ, GZ-HD300BEK, GZ-HD300BER, GZ-HD300BEU, GZ-HD300BEZ, GZ-HD300REK, GZ-HD300RER, GZ-HD300REU, GZ-HD300REZ, GZ-HD320BEK, GZ-HD320BER, GZ-HD320BEU and GZ-HD320BEZ .

MODEL	GZ-HD300AEK	GZ-HD300AER	GZ-HD300AEU	GZ-HD300AEZ	GZ-HD300BEK	GZ-HD300BER	GZ-HD300BEU
BODY COLOR	BLUE	BLUE	BLUE	BLUE	BLACK	BLACK	BLACK
HDD	60GB	60GB	60GB	60GB	60GB	60GB	60GB
AC ADAPTER	AP-V20M	AP-V20E	AP-V20E	AP-V20E	AP-V20M	AP-V20E	AP-V20E
AC CORD	YES(BS)	NO	NO	NO	YES(BS)	NO	NO

MODEL	GZ-HD300BEZ	GZ-HD300REK	GZ-HD300RER	GZ-HD300REU	GZ-HD300REZ	GZ-HD320BEK	GZ-HD320BER
BODY COLOR	BLACK	RED	RED	RED	RED	BLACK	BLACK
HDD	60GB	60GB	60GB	60GB	60GB	120GB	120GB
AC ADAPTER	AP-V20E	AP-V20M	AP-V20E	AP-V20E	AP-V20E	AP-V20M	AP-V20E
AC CORD	NO	YES(BS)	NO	NO	NO	YES(BS)	NO

MODEL	GZ-HD320BEU	GZ-HD320BEZ
BODY COLOR	BLACK	BLACK
HDD	120GB	120GB
AC ADAPTER	AP-V20E	AP-V20E
AC CORD	NO	NO

2.2 REPLACING HDD

NOTE1) After HDD replacement, format the HDD first.

When the power is turned on after the HDD replacement, the below "Warning screen" is displayed.
Be sure to format the HDD following the messages.
Be sure to turn off the power once after the formatting.
If the HDD recording is started without being turned off the power, normal recording cannot be performed although the recording will start.

NOTE2)

The picture title data needs to be written in the HDD.
Download the data and writing procedure from JS-NET.
Note that the picture title is a thumbnail image used in Creating Playlist including Titles and saved in the space where users cannot see.

< "Warning screen">

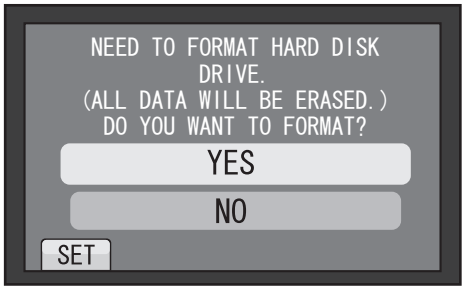


Fig.2-2-1

2.3 CHECKING THE CPU VERSIONS

Procedure

(1) Open the MONITOR ASSY to turn the power ON.
(2) While halfway pressing and holding the [SNAPSHOT] button, repeat touching the buttons [A] and [B] 3 times in order: [A]→[B]→[A]→[B]→[A]→[B].
(3) Release the halfway pressed [SNAPSHOT] button.
NOTE)
[VERSION INFO] is displayed on the monitor for about 5 seconds.
(4) Release the pressed [MENU] button, and the mode is made clear.
NOTE)
When the mode is not canceled and the button is not operable, disconnect the battery or the DC cable to reset the power. Even when the mode is canceled, resetting the power is recommended.

Example:For GZ-HD320

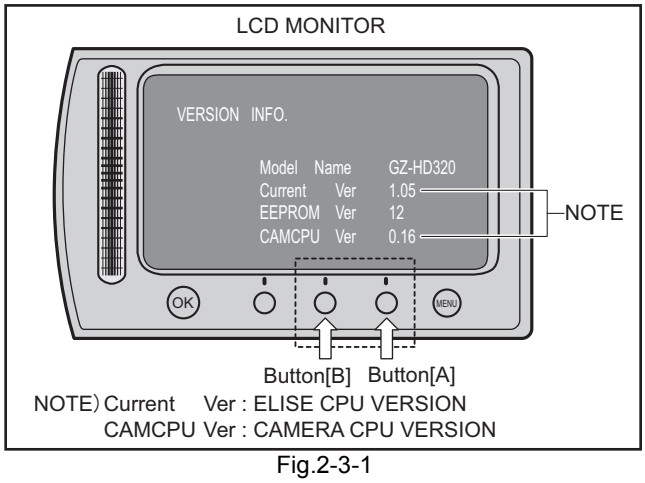


Fig.2-3-1

NOTE) Display of CAMCPU Ver: Camera CPU Version

As the Camera CPU Version cannot be displayed correctly, check the version using Service Support System.

2.4 FIRMWARE UPDATE

Connecting Everio to a PC via USB cable enables firmware update.
Connect a battery, capable of operating for 10 minutes or longer, and an AC adapter to Everio for update.
* The following procedure shows the monitor displays of the firmware update from ver. 0.82 to ver. 1.55.
* Use Windows XP or Windows Vista.

1.Preparation

(1)Preparation
Download the firmware update application software from JS-NET.

(2)Connection
Connect a battery that is capable of operating for 10 minutes or longer and an AC adapter to Everio.
* To ensure secure power supply during the update, update is disabled if either of them is not available.

2.Firmware transfer

(1) Select "UPDATE" in the main menu of Everio.
MENU > BASIC SETTINGS > UPDATE

Fig.2-4-1

(2)When the displayed current version is an old one, select "YES".

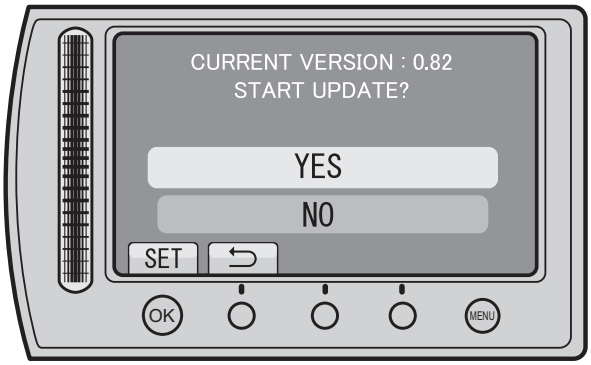


Fig.2-4-2

(3)Follow the directions on the monitor to connect Everio to the PC via USB cable.

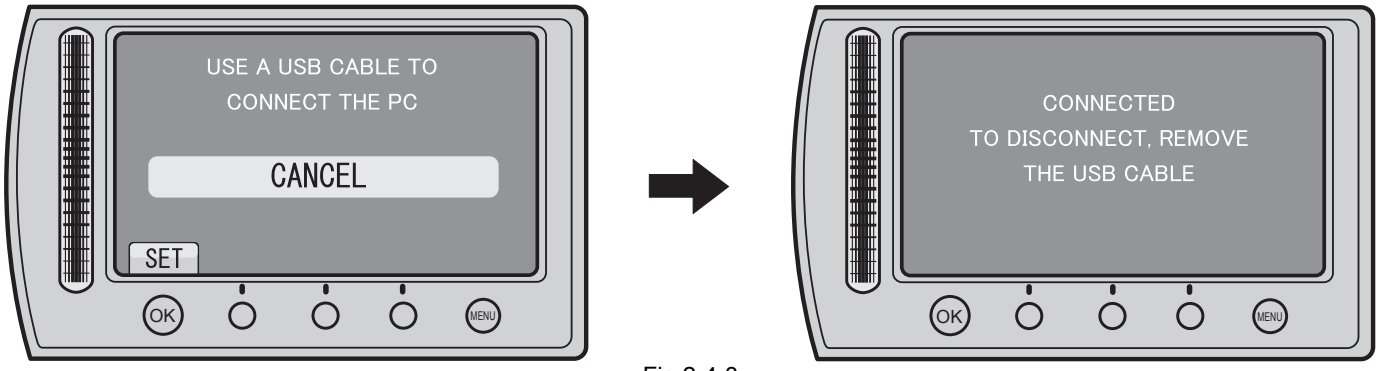
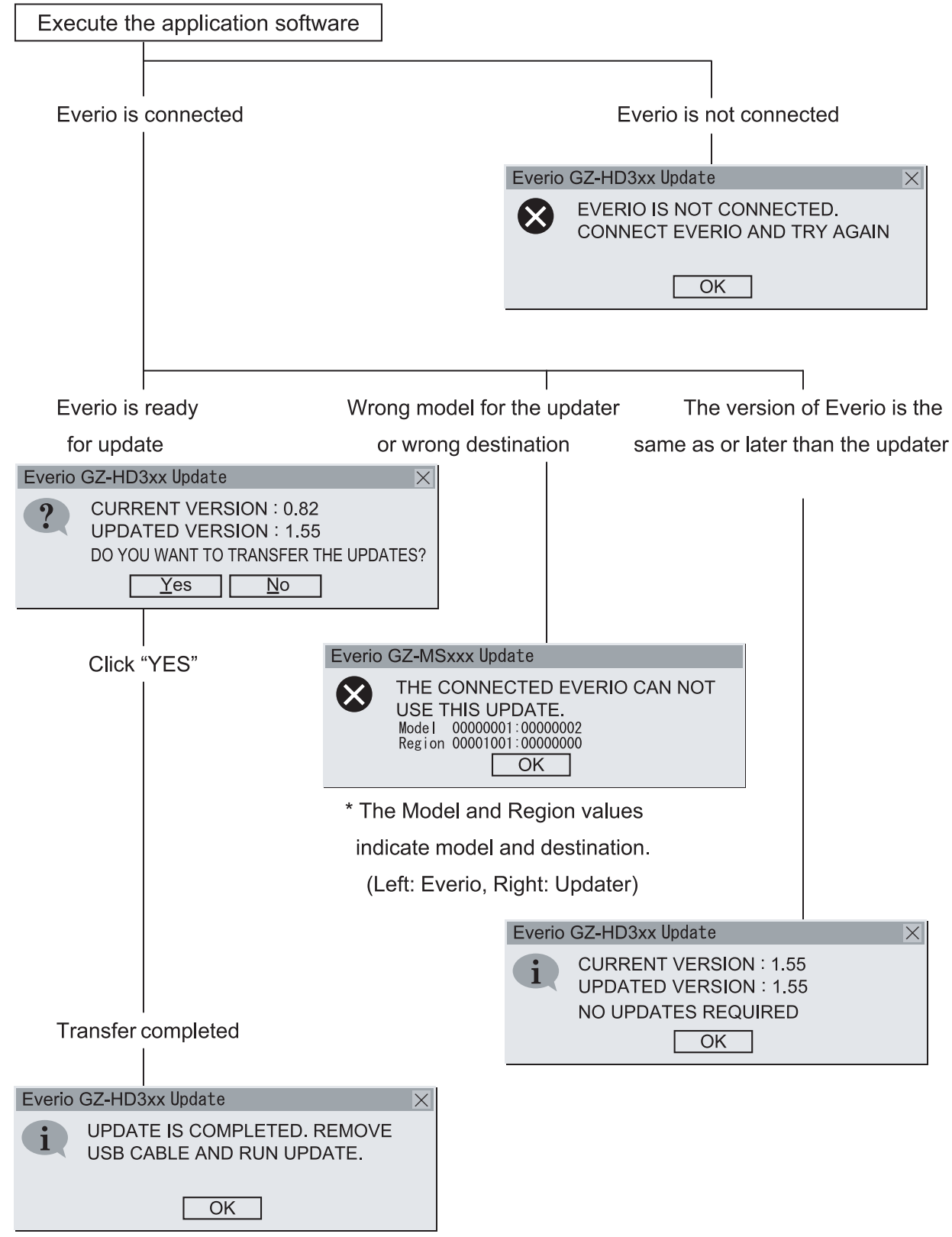


Fig.2-4-3

(4)Execute the downloaded application software.


Execute the application software
Everio is connected
Everio is not connected
Everio GZ-HD3xx Update
EVERIO IS NOT CONNECTED.
CONNECT EVERIO AND TRY AGAIN
OK
Everio is ready for update
Wrong model for the updater or wrong destination
The version of Everio is the same as or later than the updater
Everio GZ-HD3xx Update
CURRENT VERSION : 0.82
UPDATED VERSION : 1.55
DO YOU WANT TO TRANSFER THE UPDATES?
Yes
No
Click “YES”
Everio GZ-MSxxx Update
THE CONNECTED EVERIO CAN NOT USE THIS UPDATE.
Model 00000001:00000002
Region 00001001:00000000
OK
* The Model and Region values indicate model and destination.
(Left: Everio, Right: Updater)
Everio GZ-HD3xx Update
CURRENT VERSION : 1.55
UPDATED VERSION : 1.55
NO UPDATES REQUIRED
OK
Transfer completed
Everio GZ-HD3xx Update
UPDATE IS COMPLETED. REMOVE USB CABLE AND RUN UPDATE.
OK

Click “OK” to finish the application software.

Fig.2-4-4

3.Execute update

(1)Disconnect the USB cable, and remove Everio from the PC.

(2)Check the current and updated versions, and then select "YES".

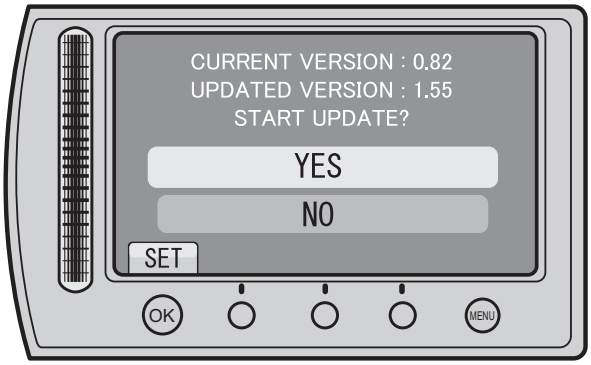


Fig.2-4-5

(3)Carefully read and understand the warning, and then select "YES".

* It takes about 1 minutes and 30 seconds to complete the update.

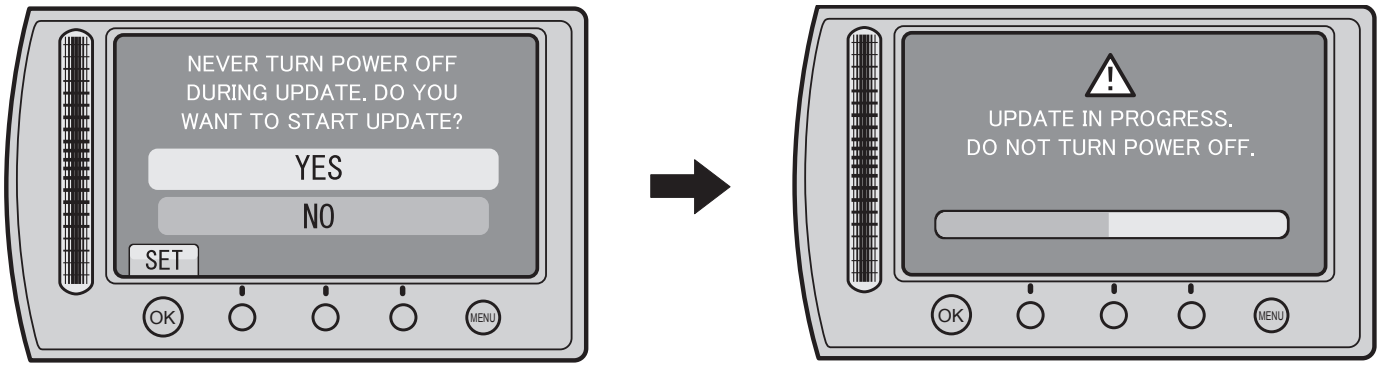


Fig.2-4-6

(4)Select "OK", and then re-start Everio.

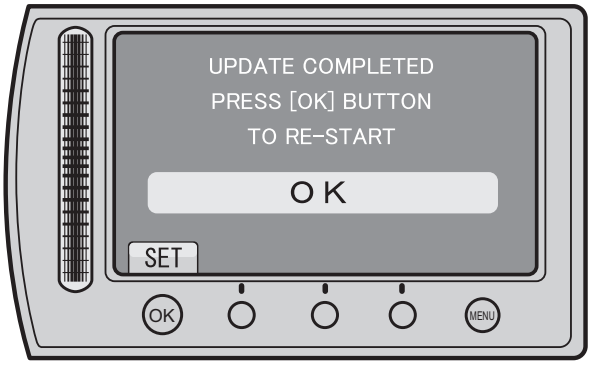


Fig.2-4-7

(5)After the re-start, check that the current firmware is updated in UPDATE.

MENU > BASIC SETTINGS > UPDATE

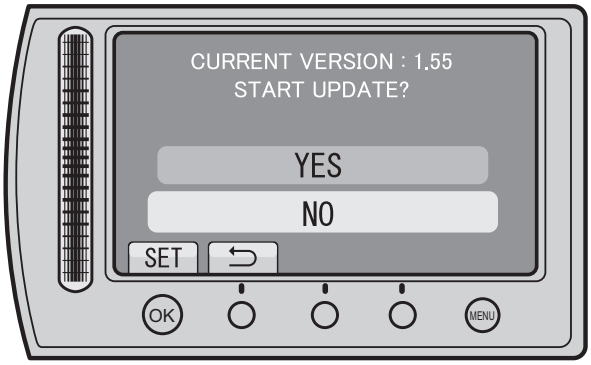


Fig.2-4-8

When the updated firmware version is confirmed, select "NO".

SECTION 3
DISASSEMBLY

3.1 BEFORE ASSEMBLY AND DISASSEMBLY

3.1.1 Precautions

- Be sure to disconnect the power supply unit prior to mounting and soldering of parts.
- Prior to removing a component part that needs to disconnect its connector(s) and its screw(s), first disconnect the wire(s) from the connector(s), and then remove the screw(s).
- When connecting/disconnecting wires, pay enough attention not to damage the connectors.
- When inserting the flat wire to the connector, pay attention to the direction of the flat wire.
- Be careful in removing the parts to which some spacer or shield is attached for reinforcement or insulation.
- When replacing chip parts (especially IC parts), first remove the solder completely to prevent peeling of the pattern.
- Tighten screws properly during the procedures. Unless otherwise specified, tighten screws at a torque of 0.088N·m (0.9kgf·cm). However, as this is a required value at the time of production, use the value as a measuring stick when proceeding repair services. (See "SERVICE NOTE" as for tightening torque.)

3.1.2 Destination of connectors

Two kinds of double-arrows in connection tables respectively show kinds of connector/wires.

⇔ : Flat wire ↔ : Wire ⬌ : Board to board (B-B)
: The connector of the side to remove

CONN. No.	CONNECTOR					PIN No.
CN2a	MAIN	CN101	⇔	MONI BW	CN761	40
CN2b	MAIN	CN103	↔	MINI BW	CN762	10

3.1.3 Disconnection of connectors (Wires)

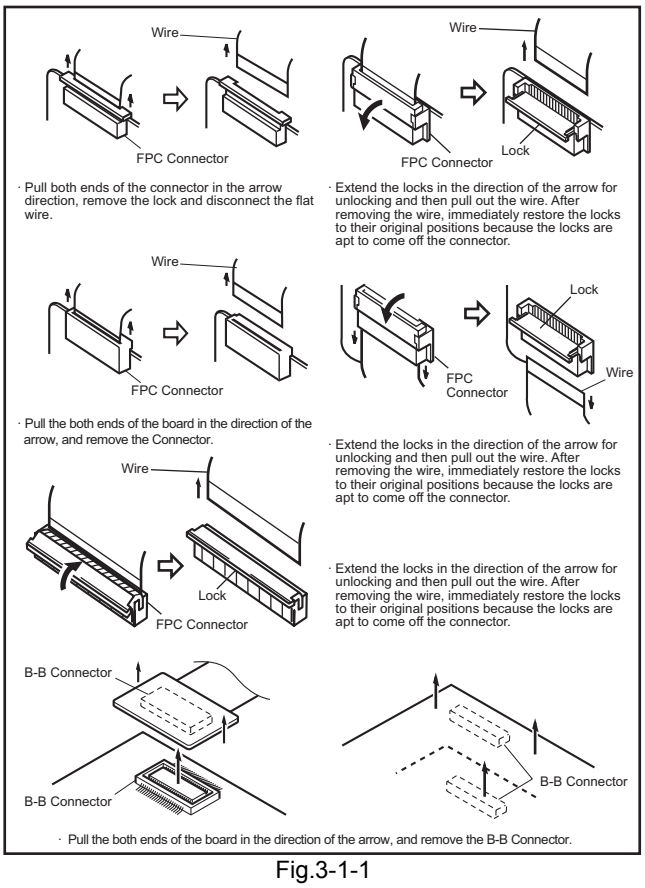

Wire
FPC Connector
· Pull both ends of the connector in the arrow direction, remove the lock and disconnect the flat wire.
Wire
Lock
FPC Connector
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
Wire
FPC Connector
· Pull the both ends of the board in the direction of the arrow, and remove the Connector.
Lock
FPC Connector
Wire
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
Wire
Lock
FPC Connector
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
B-B Connector
B-B Connector
B-B Connector
· Pull the both ends of the board in the direction of the arrow, and remove the B-B Connector.

Fig.3-1-1

3.1.4 Tools required for disassembly and assembly

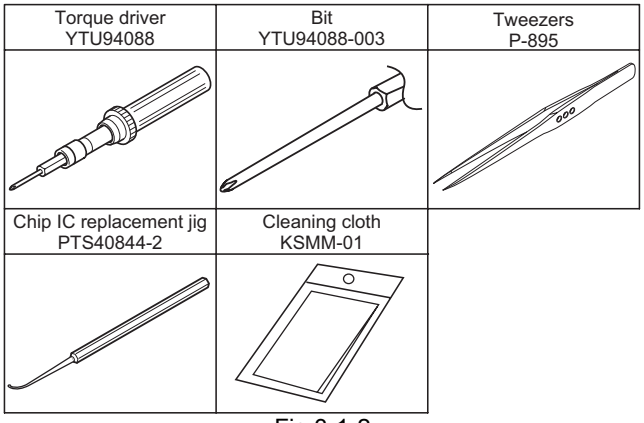


Fig.3-1-2

- **Torque driver**
  Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.
- **Bit**
  This bit is slightly longer than those set in conventional torque drivers.
- **Tweezers**
  To be used for removing and installing parts and wires.
- **Chip IC replacement jig**
  To be used for replacement of IC.
- **Cleaning cloth**
  Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

3.2 ASSEMBLY AND DISASSEMBLY OF MAIN PARTS

3.2.1 Assembly and disassembly

When reassembling, perform the step(s) in reverse order.

STEP No.	PART	Fig. No.	POINT	NOTE
[1]	TOP COVER ASSY	C1	4(S1a), 3(L1a),CN1a	-
[2]	UPPER ASSY (Inc. VF ASSY, SPEAKER/MONITOR)	C2-1	(S2a),2(S2b),3(S2c) 2(SD1a), L2,CN2a,b	-
[8]	E.VF UNIT(B/W)	C2-2	2(S8),L8,CN8a	NOTE 8
(∗1)	(∗2)	(∗3)	(∗4)	(∗5)

(∗1) Order of steps in Procedure
When reassembling, preform the step(s) in the reverseorder. These numbers are also used as the identification (location) No. of parts Figures.
(∗2) Part to be removed or installed.
(∗3) Fig. No. showing Procedure or Part Location.
(∗4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
S = Screw L = Lock, Release, Hook
SD = Solder CN = Connector

[Example]

- 4 (S1a) = Remove 4 S1a screws.
- 3 (L1a) = Disengage 3 L1a hooks.
- 2 (SD1a) = Unsolder 2 SD1a points.
- CN1a = Remove a CN1a connector.

(∗5) Adjustment information for installation.

3.2.2 Assembly/Dissambly of cabinet parts and electrical parts

● **Disassembly procedure**

STEP No.	PART NAME	Fig. No.	POINT	NOTE
[1]	B.COVER(N)ASSY	3-2-1	3(S1),2(L1a), 2(L1b)	NOTE1
[2]	COVER (HINGE) ASSY	3-2-2	2(S2),2(L2)	NOTE2
[3]	HDD COVER ASSY	3-2-3	4(S3a),S3b,L3a,b,4(L3c)	NOTE3
[4]	TOP COVER	3-2-4	2(S4a),2(S4b),L14a,2(L4b),L4c	NOTE4
[5]	HDD	3-2-5	CN5	NOTE5a,b,c,d,e,f
[6]	HDD CASE ASSY	3-2-6	3(S6),L6a,b,c	-
[7]	BKT(O.TOP)	3-2-7	2(S7),L7a,b,2(L7c),L7d	-
[8]	ORNAMENT(TOP)	3-2-8	L8a,b,c,d,e	NOTE8
[9]	UPPER ASSY	3-2-9	CN9,S9a,b,L9	NOTE9
[10]	REAR COVER ASSY (Inc.REAR BOARD ASSY,ZOOM UNIT)	3-2-10	CN10a,b,2(S10),L10a,b	-
[11]	ZOOM UNIT	3-2-11	S11,L11a,b	-
[12]	REAR BOARD ASSY	3-2-12	S12,L12a,b	-
[13]	JACK BOARD ASSY	3-2-13	CN13,2(S13),2(L13a)	NOTE13
			S13,L13b,BKT(HDMI),PLATE(HDMI)	-
[14]	FRONT ASSY	3-2-14	CN14a,b.L14a,b,c	NOTE14a,b
[15]	MAIN BOARD ASSY	3-2-15	2(S15),L15,CN15a,b	NOTE15
[16]	FRAME (PLATE) ASSY	3-2-16	2(S16),L16a,b,c	-
[17]	OP BLOCK ASSY	3-2-17	3(S17),FRAME ASSY	NOTE17a,b
[18]	BARRIER UNIT	3-2-18	S18a,2(S18b)	NOTE18
[19]	HOOD(SCERW)		L19a,b	-
[20]	MIC	3-2-19	S20,L20a,b,PLATE(MIC)	NOTE20
[21]	OPE BOARD ASSY	3-2-20	S21a,CN21a,2(L21a),L21b, CN21b,2(S21b),L21c,d	NOTE21a,b,c,d,e
[22]	SPEAKER	3-2-21	S22,BKT(SPEAKER),SPACER(SPK)	NOTE22a,b
[23]	MONITOR ASSY	3-2-22	2(S23),L23	NOTE23

NOTE1:
When removing the BOTTOM COVER ASSY, open and pull up the COVER (SD).

NOTE2:
When removing the COVER (HINGE) ASSY, open the MONITOR ASSY, remove the 2 screws, rotate the MONITOR ASSY 90°, tilt it to the rear side, and then pull out the COVER (HINGE) ASSY.

NOTE3:
Screw No.8 is located under the JACK COVER (USB). Remove or slide the JACK COVER (USB) to remove the screw.

NOTE4:
Screw No.11 is located under the JACK COVER (AV). Remove or slide the JACK COVER (AV) to remove the screw.

NOTE5a:
During the procedure, be careful in handling the parts. Pay special attention not to give any external shock to the HDD.

NOTE5b:
When the HDD is replaced, be sure to refer to Replacing HDD in "SECTION2 SPECIFIC SERVICE INSTRUCTIONS" for the procedure after HDD replacement.

NOTE5c:
Be careful as the RUBBER SPACERS on both sides are easily come off when the HDD is removed from the main unit.
If the RUBBER SPACERS come off, be sure to attach them in the correct direction shown in the figure.

NOTE5d:
When connecting the FPC to the connector, insert the FPC straight into the connector. When locking the connector, be careful not to give so much load that it bends the board.

NOTE5e:
In this procedure, the FPC connected to the HDD connector is not removed. If the FPC is removed due to broken wire, be careful in attachment direction.
Be sure to connect the STOPPER side to the HDD.
Pay attention as wrong attachment could damage the HDD.

NOTE5f:
Be careful with the wiring.

NOTE8:
During the procedure, be careful not to break the parts.

NOTE9:
Please refer to Fig.3-2-20 and the following procedure for removing the UPPER ASSY.

NOTE13:
The JACK BOARD ASSY is attached between the PLATE (HDMI) and the BRACKET (HDMI). For replacement, remove the screw (No.28) and disassemble them if necessary.

NOTE14a:
When attaching the FRONT ASSY, be careful in handling the wire and the FPC.

NOTE14b:
Please refer to Fig.3-2-18 and the following procedure for removing the FRONT ASSY.

NOTE15:
When attaching the MAIN BOARD ASSY, be careful in handling the WIRE (CMOS).

NOTE17a:
Refer to 3.2.3 Assembly/Disambly of [17] OP BLOCK ASSY/ CMOS BOARD ASSY of OP BLOCK ASSY.

NOTE17b:
When attaching the OP BLOCK ASSY, be careful in handling the WIRE (CMOS).

NOTE18:
When attaching the BARRIER UNIT, be careful in handling the WIRE (MIC).

NOTE20:
When attaching the MIC, attach the BARRIER UNIT before handling the WIRE (MIC). (Refer to NOTE 18.)

NOTE21a:
When removing, remove the screw No.40 first to release the FPC, and then pull out the FPC from the connector.

NOTE21b:
When removing the OPE BOARD ASSY, release the WIRE (SPK) from the HOOK (L21b) first, and then pull out the WIRE (SPK) from the connector.

NOTE21c:
When attaching, make sure that the LEVER of the SW(S408) interlocks with the KNOB (SLIDE).

NOTE21d:

When attaching, be careful with the wiring.

NOTE21e:

During the procedure, be careful not to damage the parts.
When attaching the OPE BOARD ASSY with the MONITOR ASSY closed, be especially careful not to break the SWITCH (S401).

NOTE22a:

When removing the SPEAKER, be careful in handling as the SPACER (SPK) may come off with the SPEAKER.

NOTE22b:

When attaching, be careful with the wiring.
As the final wiring is performed when attaching the OPE BOARD ASSY, leave the wire as shown in the drawing.

NOTE23:

Refer to 3.2.4 Disassembly of [23] MONITOR ASSY.

● **Destination of connectors**

CN. No.	CONNECTOR					PIN No.
CN5	MAIN	CN102	⇔	HDD	-	40
CN9	MAIN	CN101	⇔	OPE	CN401	36/40
CN10a	MAIN	CN104	⇔	OPE UNIT	-	12
CN10b	MAIN	CN103	⇔	REAR	CN602	32/36
CN13	MAIN	CN114	⇔	JACK	-	40
CN14a	MAIN	CN111	⇔	LENS BARRIER	-	6
CN14b	MAIN	CN107	↔	MIC	-	4
CN15a	MAIN	CN105	↔	CMOS	CN4001	22
CN15b	MAIN	CN106	⇔	OP BLOCK	-	25
CN21a	OPE	CN402	⇔	MONITOR	CN703	28/29
CN21b	OPE	CN401	↔	SPEAKER	-	2

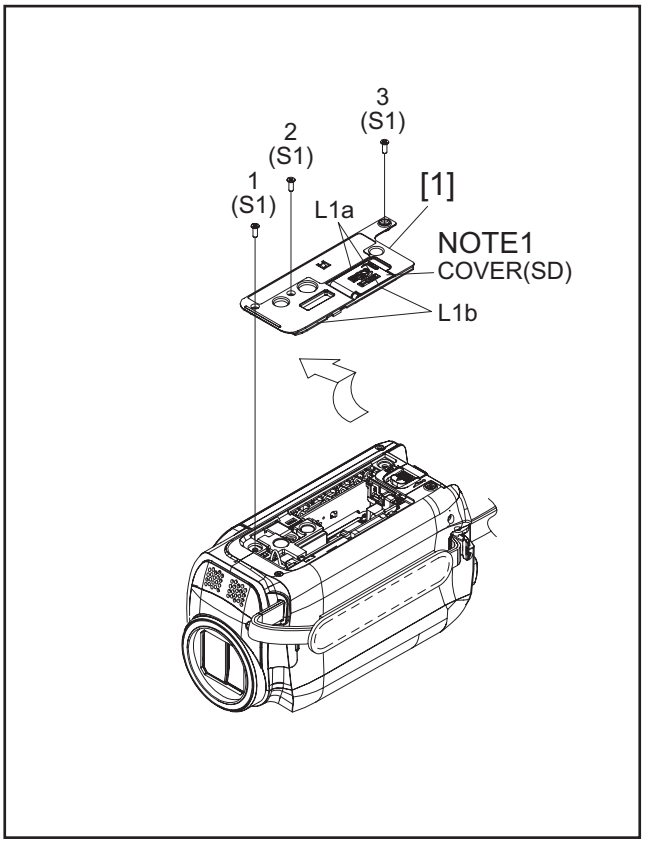


Fig.3-2-1

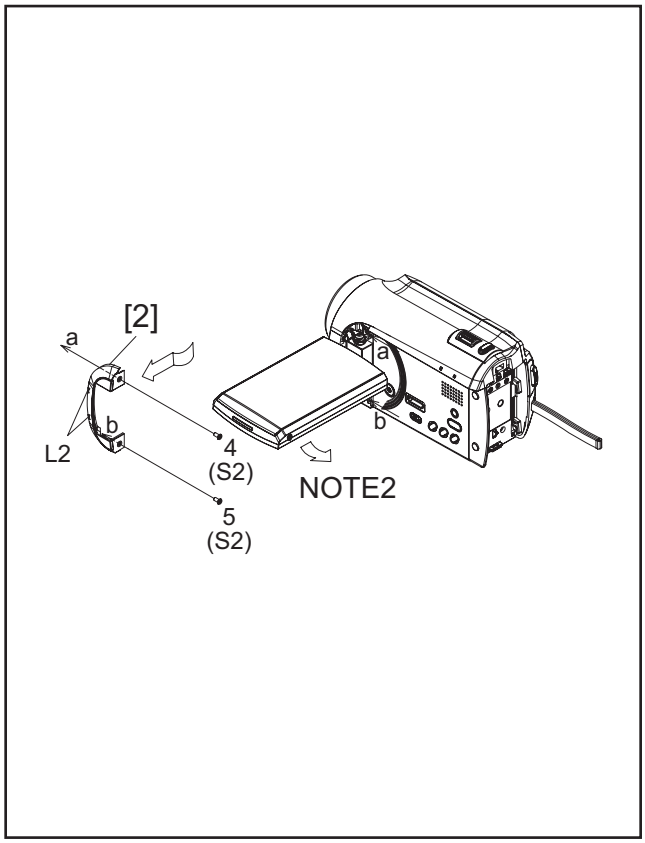


Fig.3-2-2

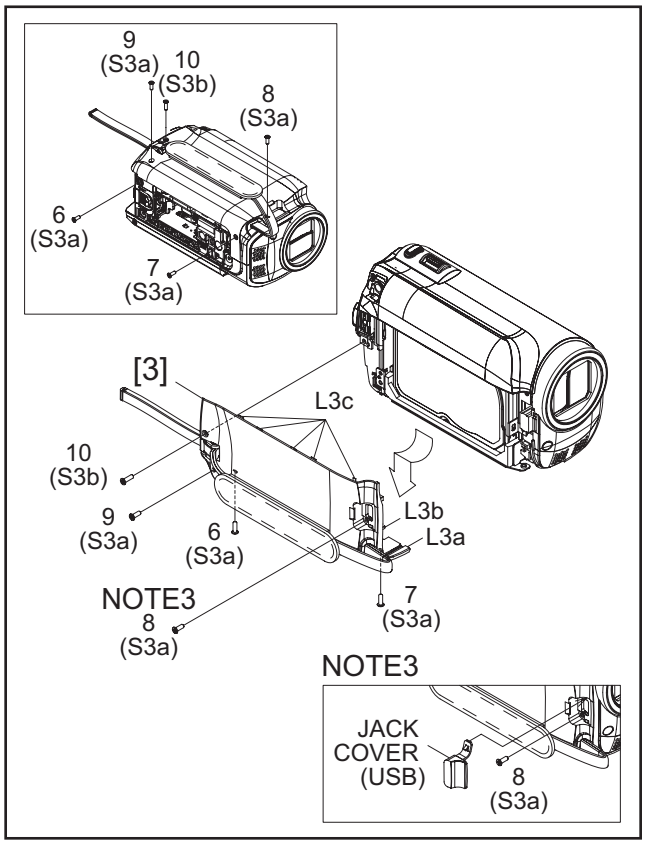


Fig.3-2-3

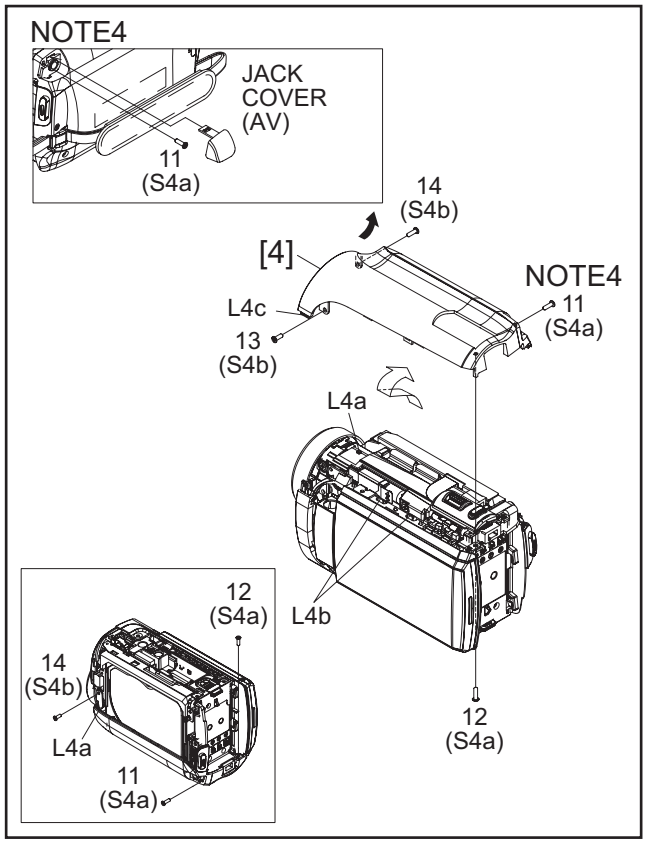


Fig.3-2-4

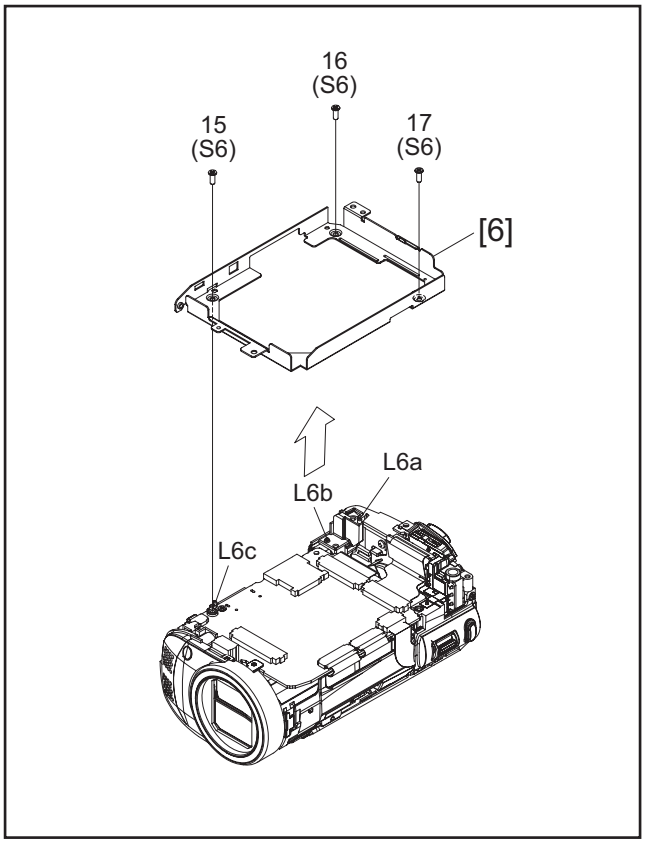


Fig.3-2-6

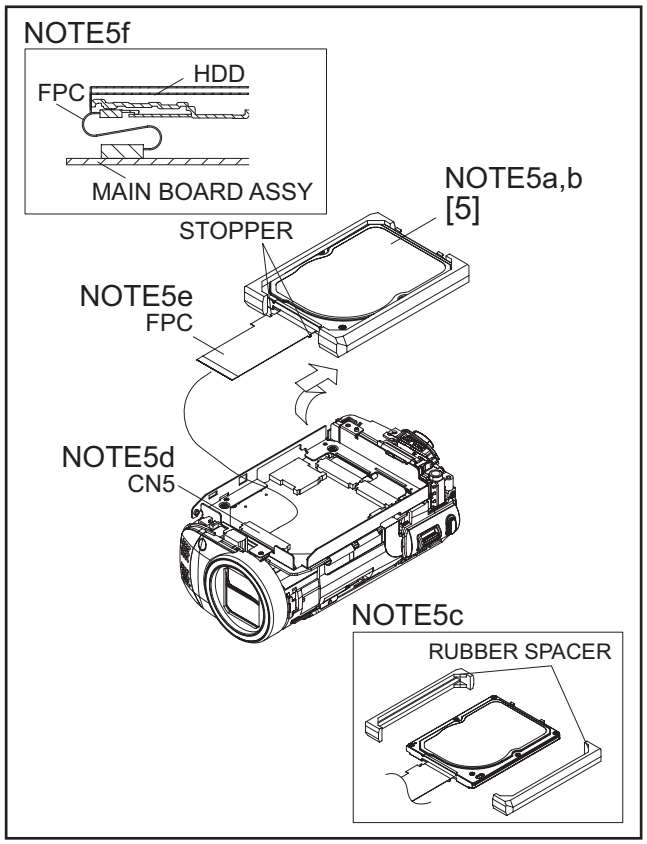


Fig.3-2-5

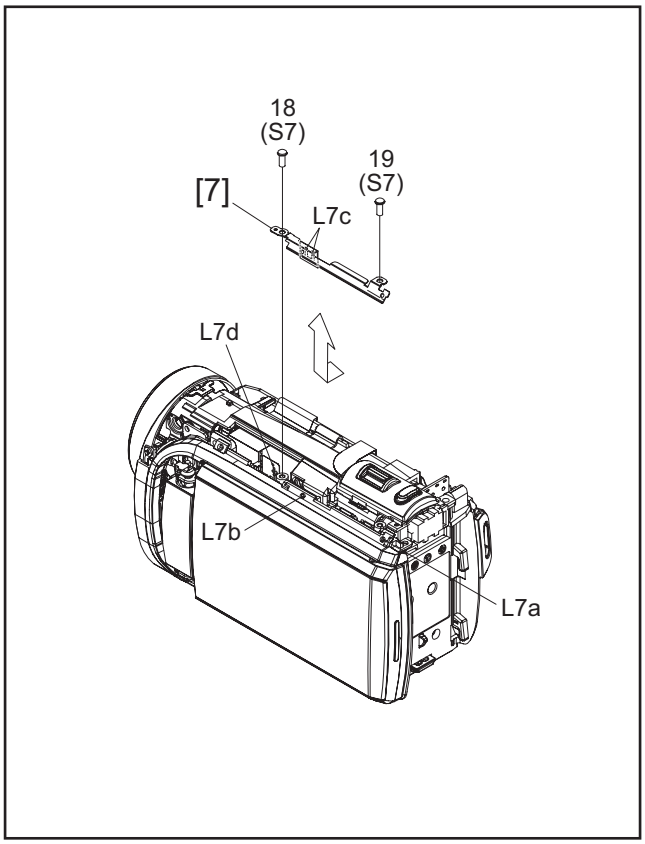


Fig.3-2-7

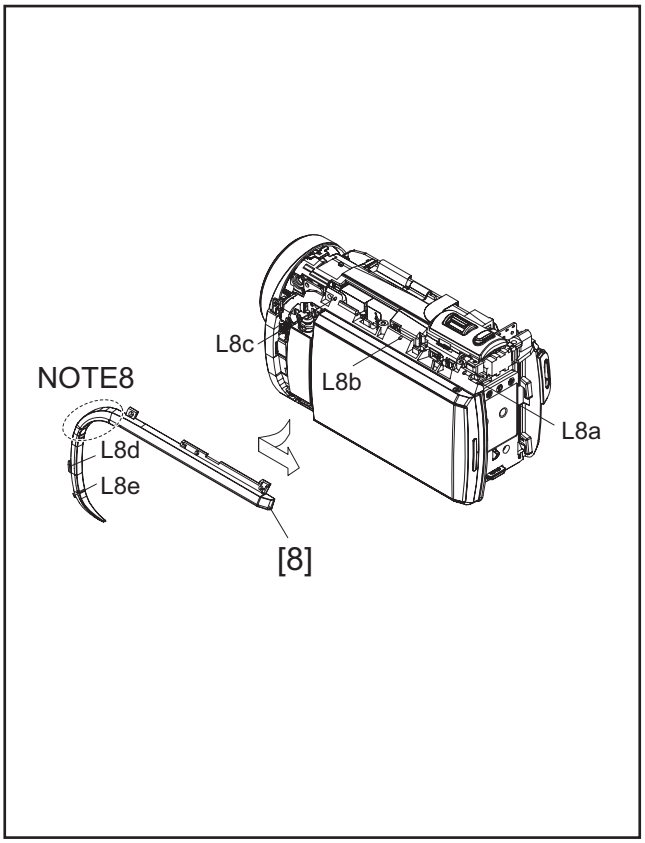


Fig.3-2-8

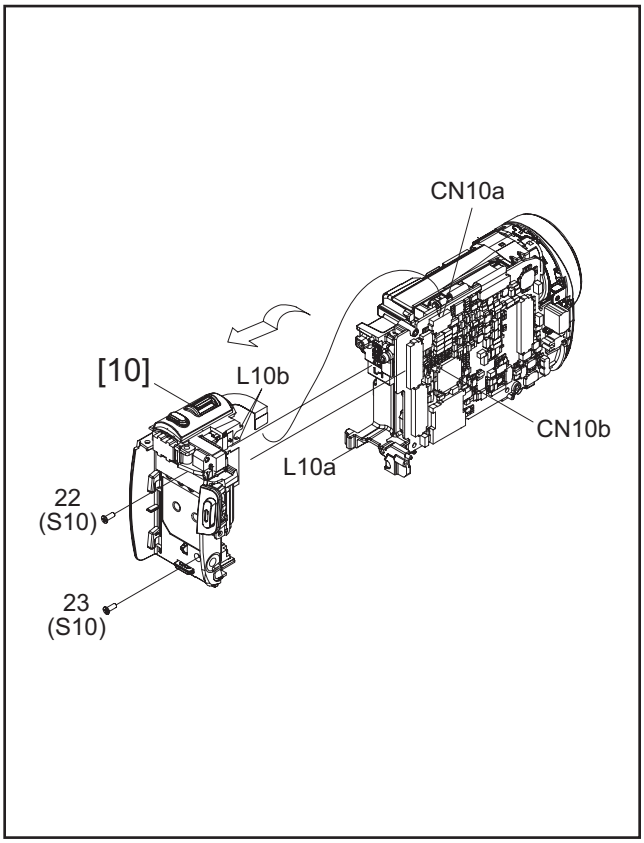


Fig.3-2-10

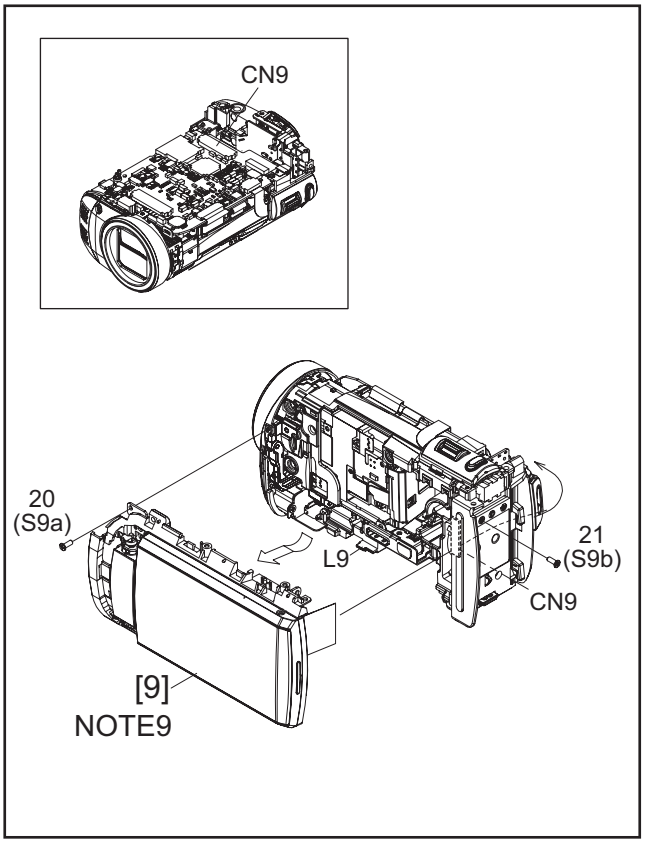


Fig.3-2-9

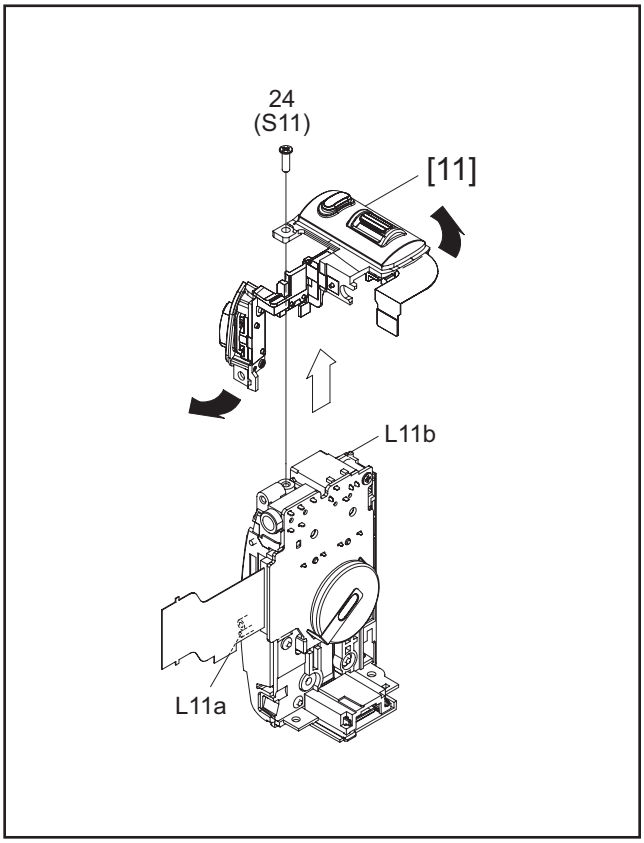


Fig.3-2-11

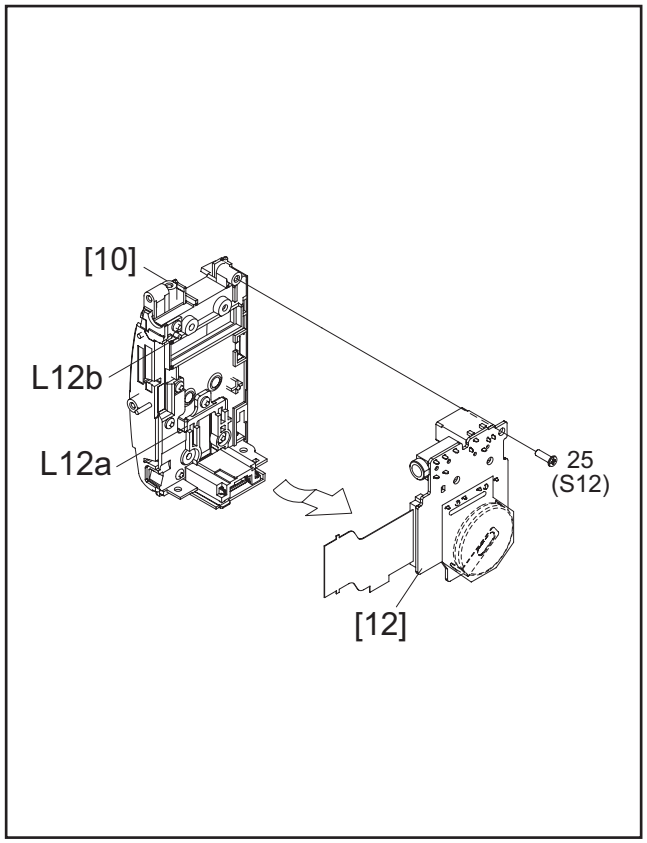


Fig.3-2-12

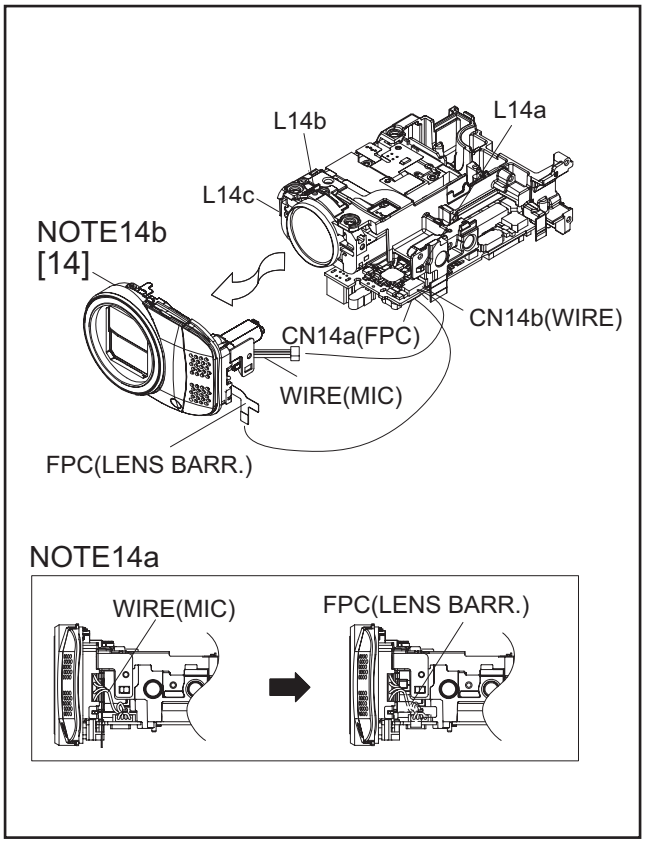


Fig.3-2-14

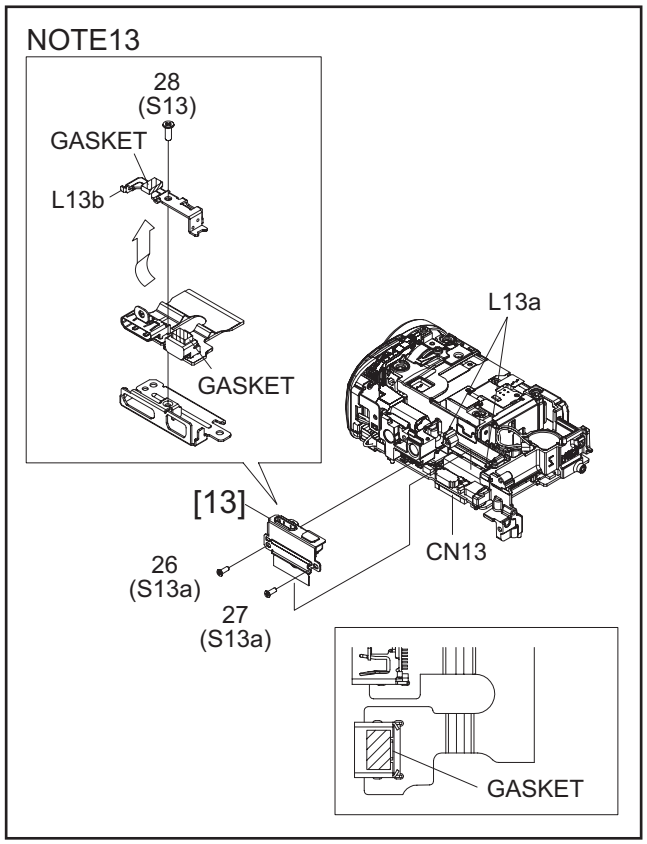


Fig.3-2-13

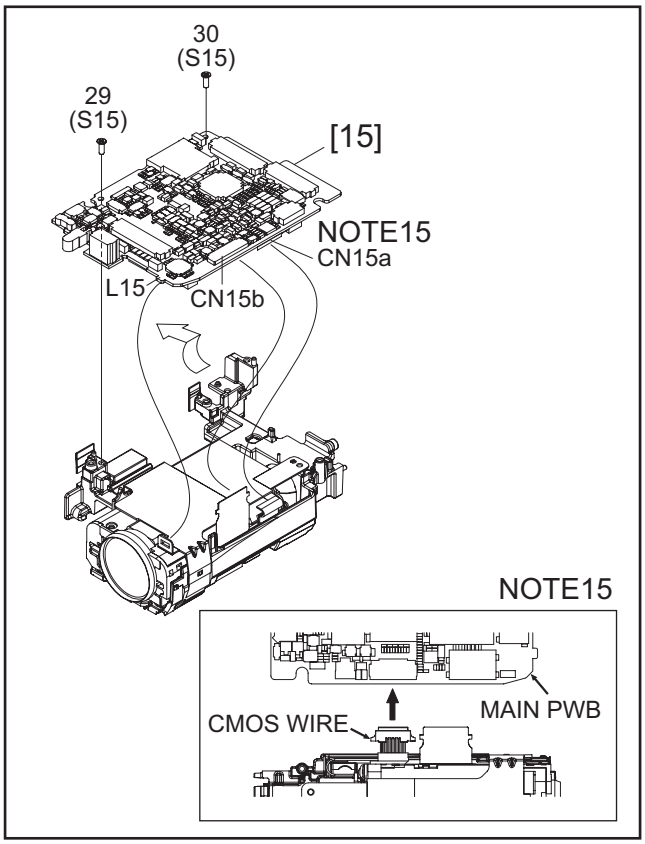


Fig.3-2-15

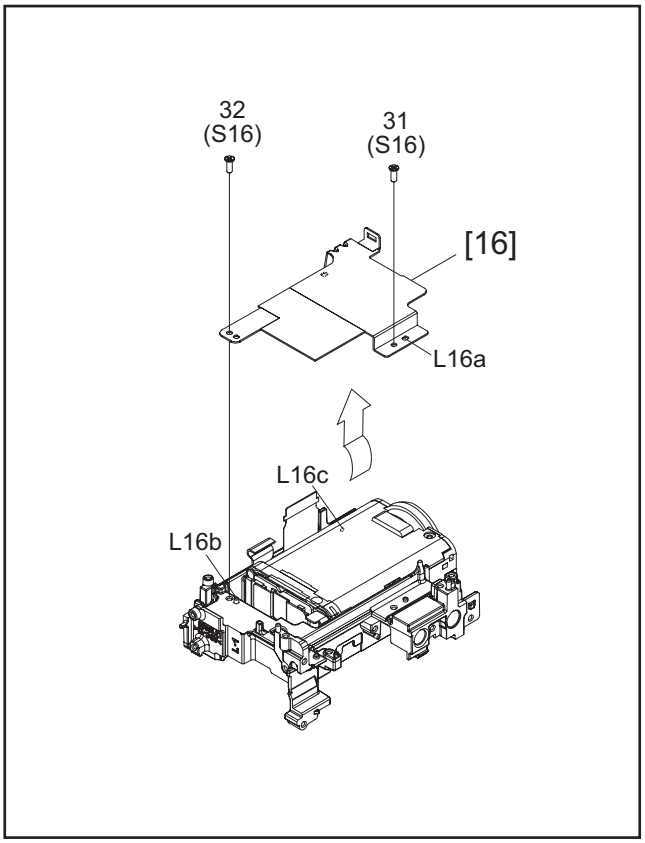


Fig.3-2-16

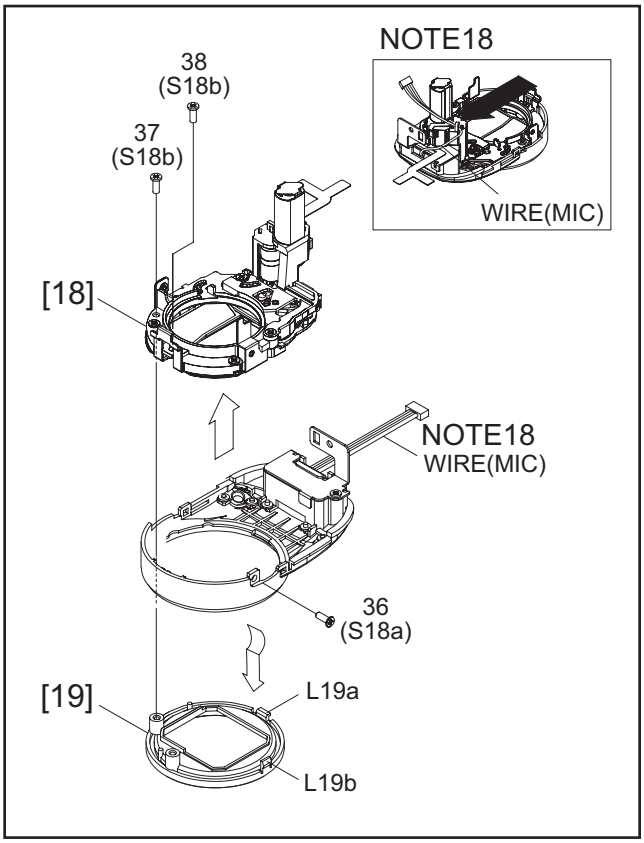


Fig.3-2-18

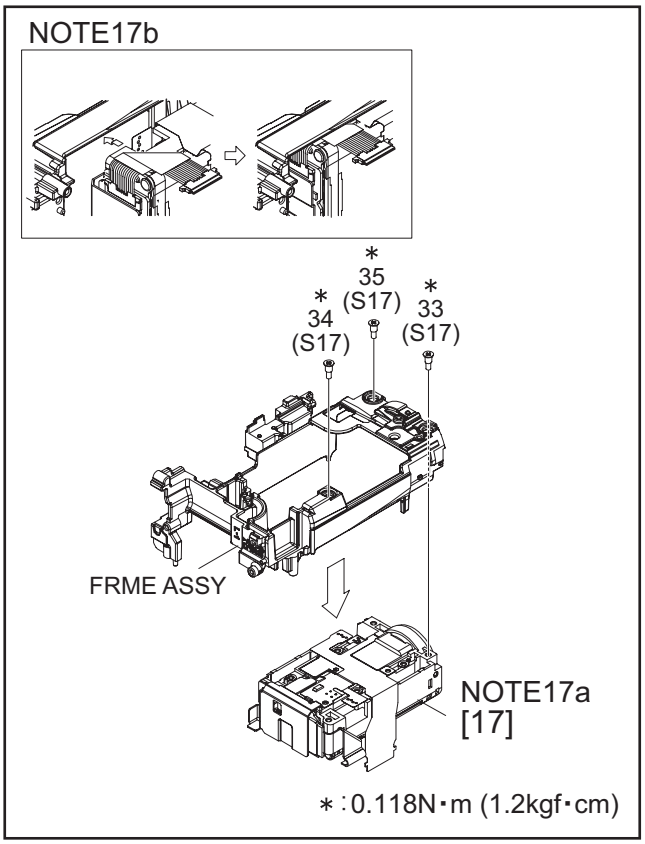


Fig.3-2-17

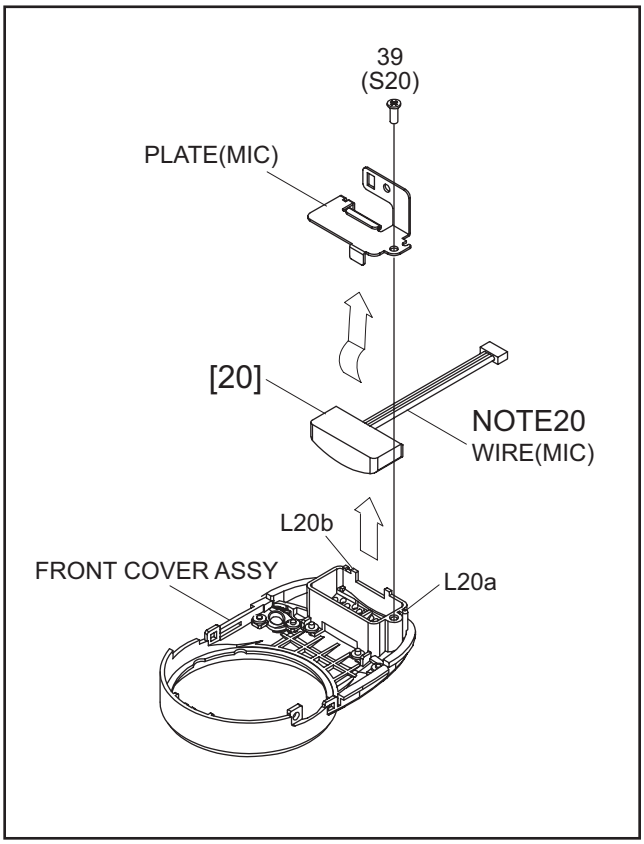


Fig.3-2-19

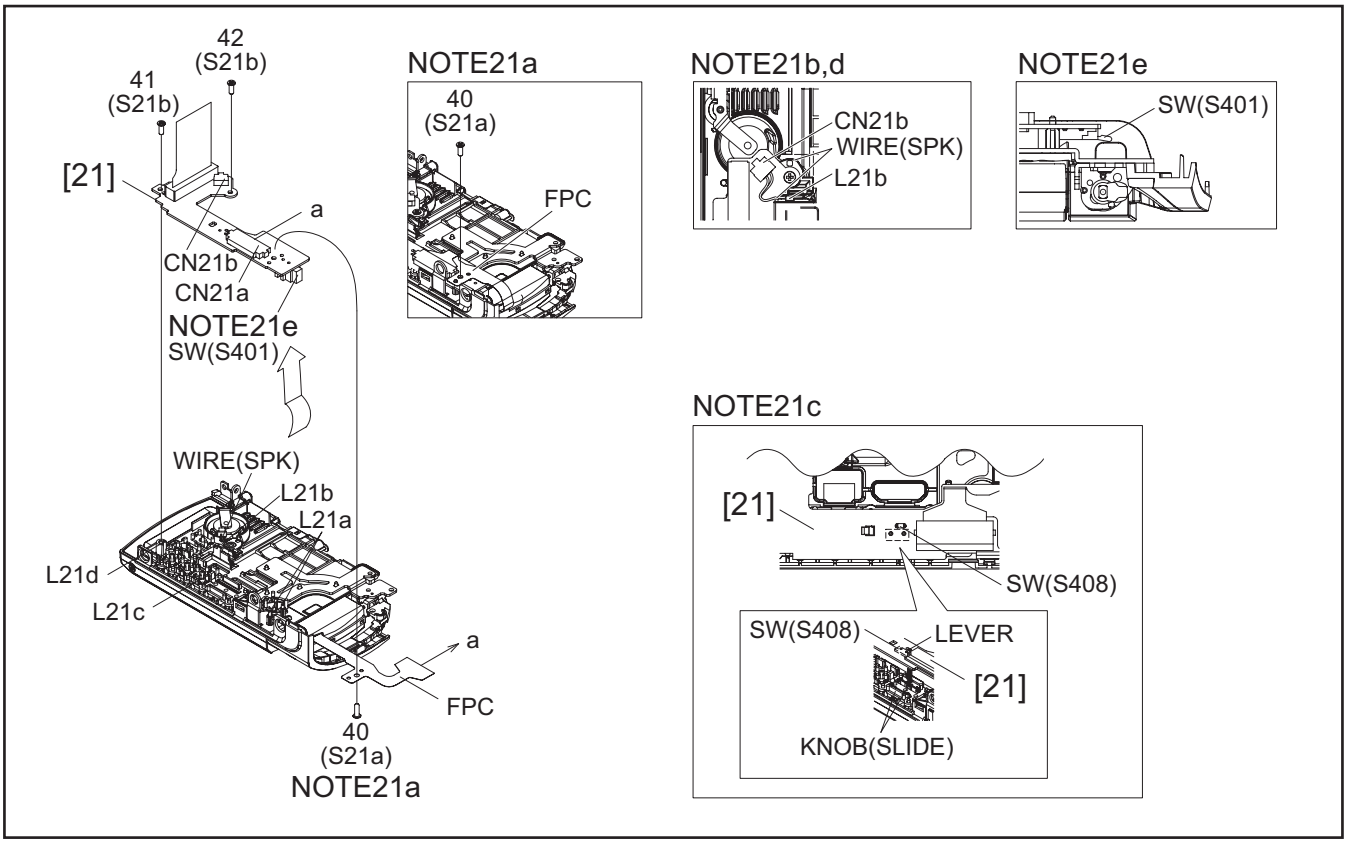


Fig.3-2-20

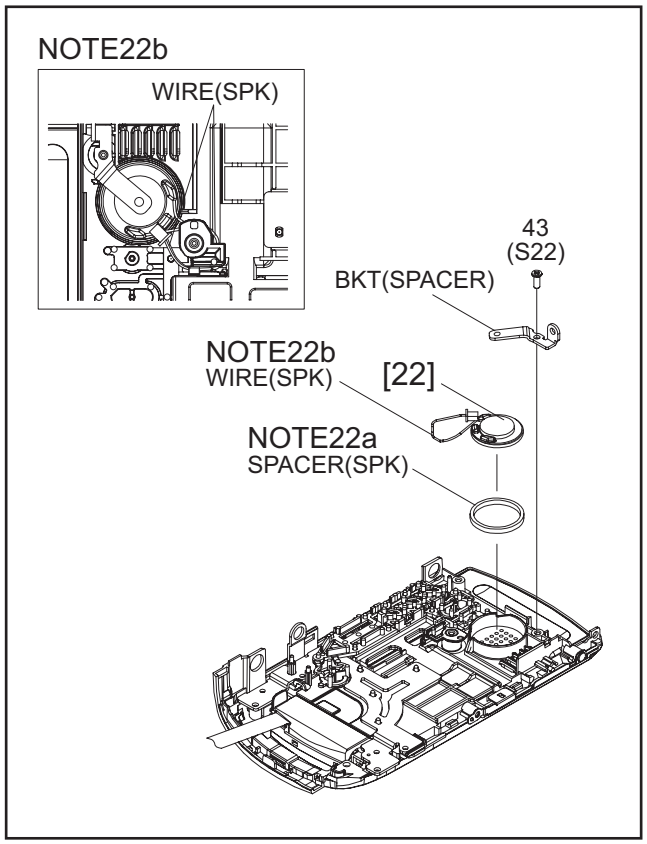


Fig.3-2-21

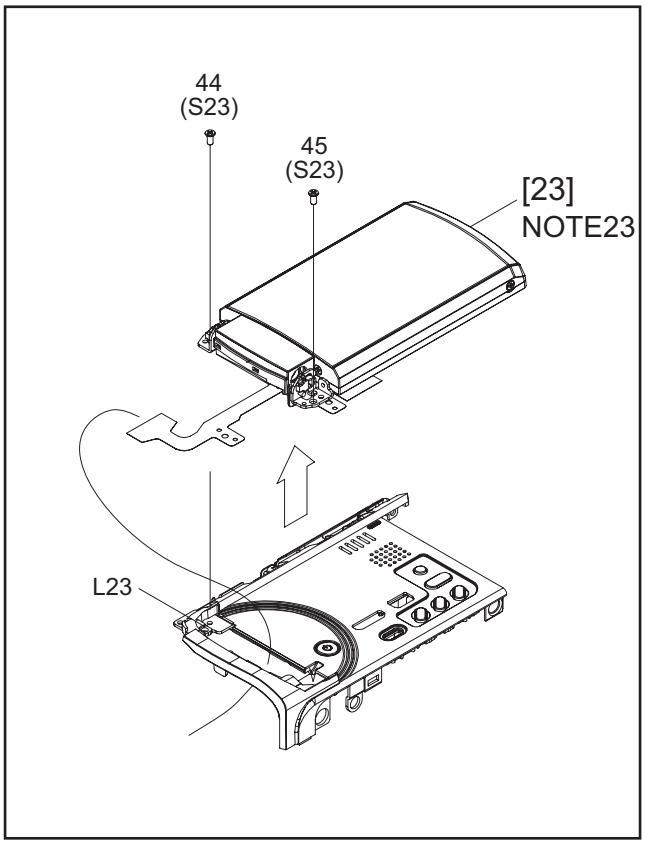


Fig.3-2-22

3.2.3 Assembly/Disambly of [17] OP BLOCK ASSY/CMOS BOARD ASSY

●Precautions

(1) Be careful in handling the LENS components.
Pay special attention to the surfaces to protect them from stains, dust, or scratches.
If the surfaces are soiled with finger prints or other stains, wipe them off with silicon paper, clean chamois leather, or recommended cleaning cloth.

●Disassembly of OP BLOCK ASSY / CMOS BOARD ASSY

(1) Remove the screw (1), and then remove the SHIELD(CMOS).

NOTE17a:

When reMmoving the SHIELD(CMOS), be careful in handling as the SHIELD(CMOS) or CMOS BOARD ASSY may be removed together with the HEAT SHEET attached.

(2) Remove the 2 screws (2,3), and then remove the CMOS FRAME ASSY.

NOTE17b:

When removing the CMOS FRAME ASSY, be careful in handling as the CMOS FRAME ASSY may be removed together with the SHEET attached.

NOTE17c:

The CMOS BOARD ASSY is included in CMOS FRAME ASSY.
Replace the CMOS BOARD ASSY as a CMOS FRAME ASSY, not as a single part replacement.

●Assembly of OP BLOCK ASSY / CMOS BOARD ASSY

(1) The SHEET is set in the OP BLOCK ASSY.
(2) Attach the CMOS FRAME ASSY first,so that the SHEET stays in place, and tighten with the 2 screws (2,3).
(3) Attach the SHIELD(CMOS) first, and tighten with the screw (1).

●Replacement of service repair parts

The service repair parts for the OP BLOCK ASSY are as listed below. When replacing parts, be careful not to cut the FPCs or damage any parts by soldering (excessive heat).

(1) FOCUS MOTOR UNIT
(2) ZOOM MOTOR UNIT
(3) AUTO IRIS UNIT

NOTE 17d:

When replacing the FOCUS MOTOR UNIT or the ZOOM MOTOR UNIT, solder the FPC at a space of about 0.1 mm above the terminal pin.

NOTE 17e:

The AUTO IRIS UNIT includes the FPC ASSY and two sensors.

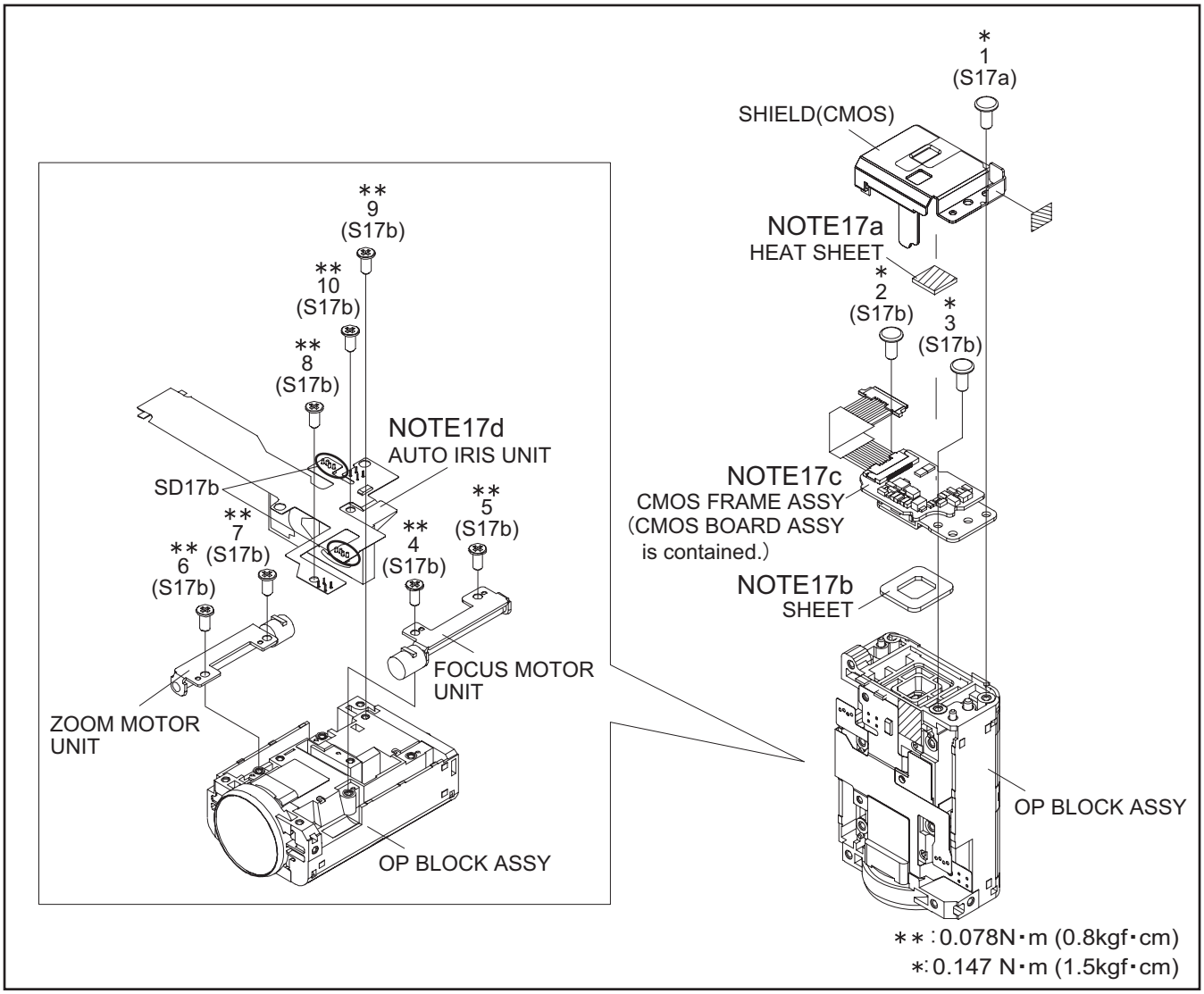


Fig.3-2-23

3.2.4 Disassembly of [23] MONITOR ASSY

●CAUTIONS

(1) During the procedure, be careful in handling the LCD MODULE and other parts. Pay special attention not to damage or stain the monitor screen.
If fingerprints are left on the screen, wipe them with clean chamois leather or a cleaning cloth.

● Removing MONITOR ASSY

(1) Remove the 2 screws (1,2).
(2) Turn the HINGE UNIT ASSY 90°, and remove the 2 screws (3,4).
(3) Remove the MONI.COVER ASSY by removing the 8 hooks (L23a-h).
(4) Release the lock of the connector (CN23a), and remove the HINGE UNIT ASSY by lifting it up.
NOTE23a:
During the procedure, be careful in handling the FPC.
(5) Release the lock of the connectors (CN23b,c), and pull out the FPC.
(6) Remove the screw (5), and remove the MONITOR BOARD ASSY .
NOTE23b:
During the procedure, be careful in handling the FPC.
(7) Remove the SHEET (M.REF), LIGHT GUIDE, SHEET(M/DIFF), and the SHEET(BEF).
NOTE23c:
When attaching, insert one side of the SHEET (M/DIFF) under the LCD CASE RIB.
NOTE23d:
When attaching, insert each tab on both sides of the SHEET (M.REF) into the LCD CASE notch.
(8) Remove the LCD CASE, SHEET(COVER), LCD MODULE, SPACER(LCD) and the LCD BKT.
NOTE23e:
During the procedure, handle the five parts (LCD CASE, SHEET(COVER), LCD MODULE, SPACER(LCD) and the LCD BKT) together.
NOTE23f:
The SENSOR BOARD ASSY is originally affixed to the MONI.CASE ASSY using jigs and they have structures difficult to replace.
If replacement is required, please refer to the NOTE and follow the operation procedure.

●Assembly/Disambly of MONITOR CASE ASSY/SENSOR BOARD ASSY

Operation procedure

• Removing the part which is to be reused
(1) Remove the SENSOR BOARD ASSY from the MONI.CASE ASSY by gradually peeling off from the HINGE UNIT ASSY side.
NOTE23g:
During the procedure, be careful not to break.
Prepare the new SENSOR BOARD ASSY and D.FACE TAPE and use them in place of the removed parts.

• Completely peel off the remaining tape pieces of the D. FACE TAPE left on the part to be reused (MONI.CASE ASSY).
NOTE23h:
Make sure that there are no D. FACE TAPE pieces or foreign substances left on the surfaces. If necessary, clean the surfaces using alcohol etc.

• Affixing the D. FACE TAPE to the SENSOR BOARD
(1) Affix the D. FACE TAPE to the SENSOR BOARD ASSY.
NOTE23j:
Securely fix the D. FACE TAPE, and then affix the SENSOR BOARD ASSY to the D. FACE TAPE by adjusting the four frames of the SENSOR BOARD ASSY to the frame of the D. FACE TAPE. Evenly press over the paper backing of each long / short side of the L shape.
(2) Peel off the paper backing.
NOTE23k:
When removing the paper backing, check that there are no foreign substances or air bubbles on the tape.
If there are foreign substances etc., completely remove them and continue the affixing procedure.

• Affixing the SENSOR BOARD ASSY to the MONI. CASE
(1) Affix the SENSOR BOARD ASSY to the MONI. CASE
NOTE23m:
When affixing, adjust the position of the long side of the L shape to avoid misalignment, and then press evenly. Be sure to press hard for 10 seconds or more on each long/ short side of the L shape for even adhesion.
During the procedure, be careful to prevent foreign substances or air bubbles from entering.
(2) After the replacement, make sure that there are no broken or deformed parts or any abnormalities.
Use the service software for the operation check of the touch sensor sensitivity.

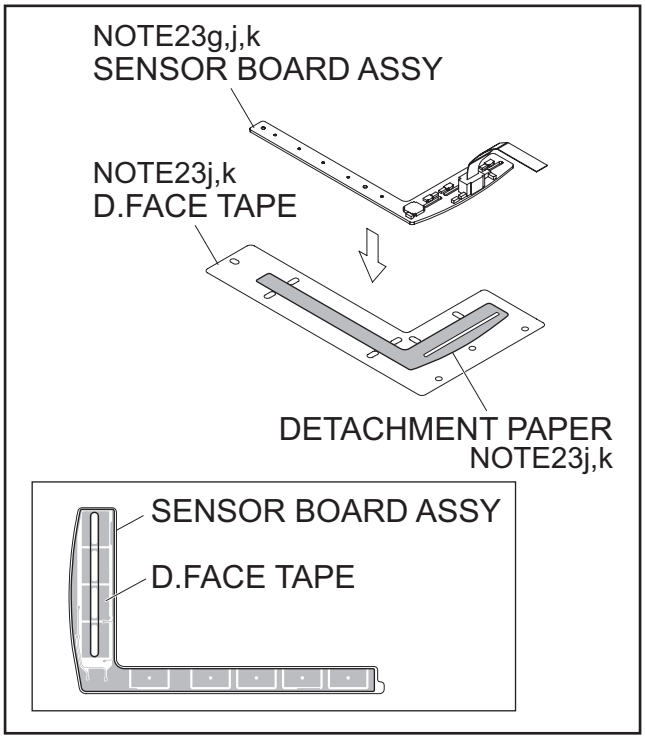


Fig.3-2-24

●Removing HINGE UNIT ASSY

(1) Remove the HINGE COVER(U).
(2) Remove the HINGE COVER(L).
(3) Remove the MAGNET.
NOTE23n:
During the procedure, be careful in handling the FPC.
During the procedure, be careful in handling the MAGNET.
When attaching, set the N pole outside as shown in the figure. Be careful when removing as there is no marking.
NOTE23p:
During the procedure, be careful in handling the FPC.
NOTE23q:
The FPC, with its connection to the MONITOR BOARD ASSY facing inward, is rolled around the axis (shaft) of the HINGE UNIT ASSY rotation 2.5 rounds (2.5times).

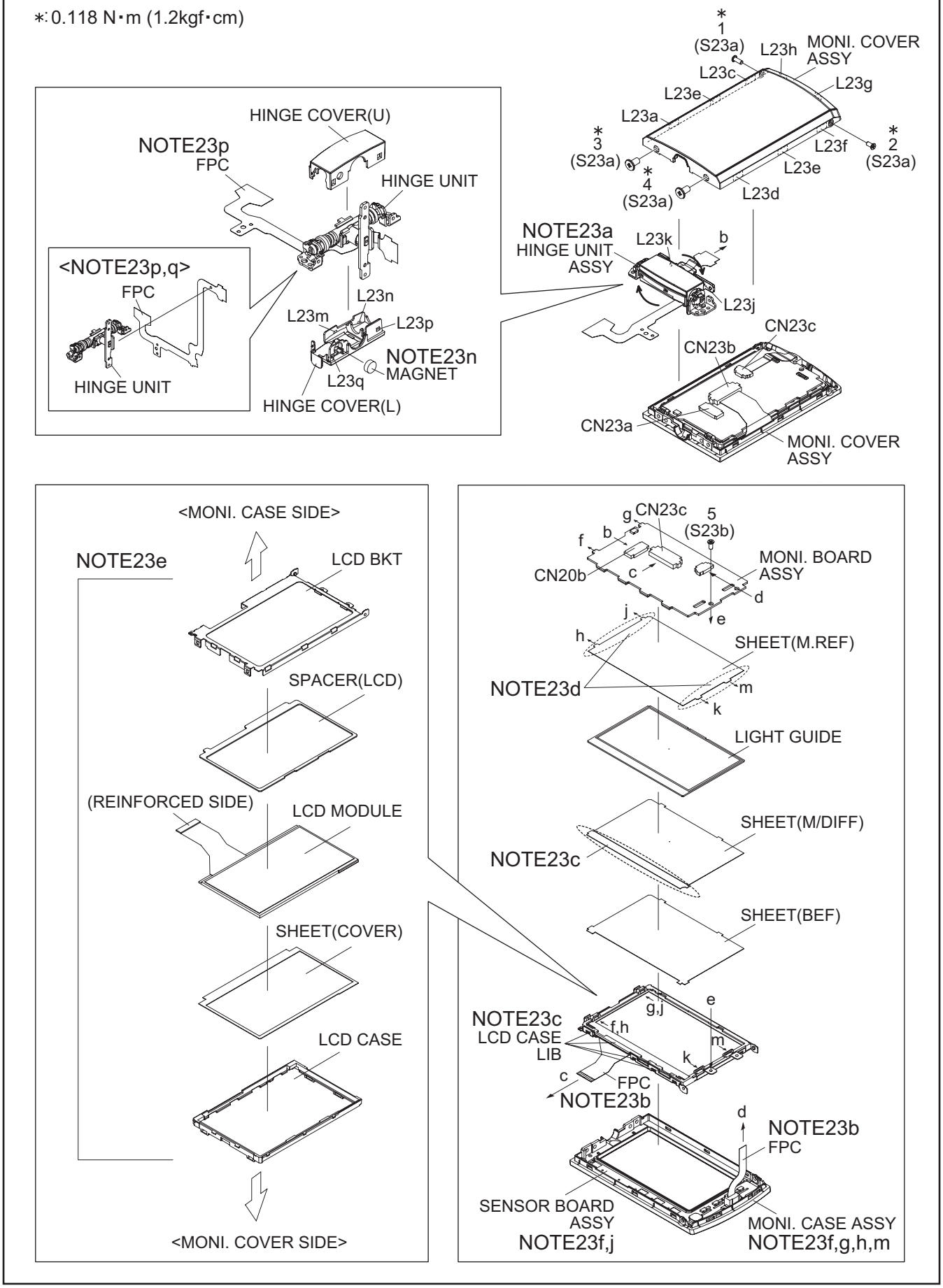

∗: 0.118 N・m (1.2kgf・cm)
HINGE COVER(U)
NOTE23p
FPC
HINGE UNIT
<NOTE23p,q>
FPC
HINGE UNIT
L23n
L23m
L23p
NOTE23n
MAGNET
L23q
HINGE COVER(L)
∗1 (S23a)
L23h
MONI. COVER ASSY
L23c
L23g
L23e
L23a
∗3 (S23a)
∗2 (S23a)
L23f
L23e
∗4 (S23a)
L23d
NOTE23a
HINGE UNIT ASSY
L23k
b
L23j
CN23c
CN23b
CN23a
MONI. COVER ASSY
<MONI. CASE SIDE>
NOTE23e
LCD BKT
SPACER(LCD)
(REINFORCED SIDE)
LCD MODULE
SHEET(COVER)
LCD CASE
<MONI. COVER SIDE>
g
CN23c
5 (S23b)
f
b
CN20b
c
MONI. BOARD ASSY
d
e
j
h
SHEET(M.REF)
NOTE23d
m
k
LIGHT GUIDE
SHEET(M/DIFF)
NOTE23c
SHEET(BEF)
g,j
e
NOTE23c
LCD CASE LIB
f,h
m
k
c
FPC
NOTE23b
d
NOTE23b
FPC
SENSOR BOARD ASSY
NOTE23f,j
MONI. CASE ASSY
NOTE23f,g,h,m

Fig.3-2-25

SECTION 4
ADJUSTMENT

4.1 PREPARATION

4.1.1 Precaution

Camera system and deck system of this model are specially adjusted by using PC.
However, if parts such as the following are replaced, an adjustment is required. The adjustment must be performed in a Service Center equipped with the concerned facilities.

- EEP ROM (IC1005 of MAIN board)
- OP BLOCK ASSY
- MONITOR ASSY

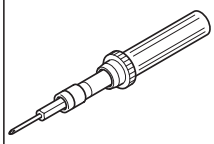
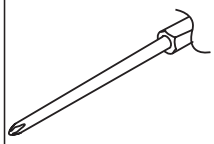
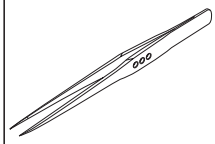
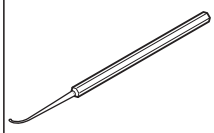
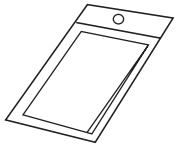
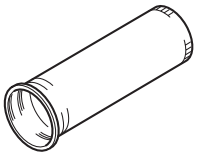
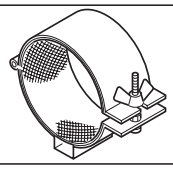
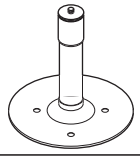
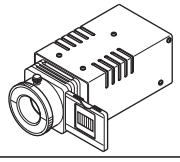
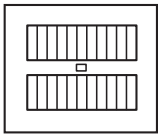
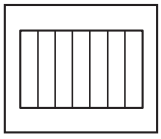
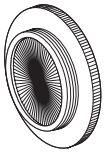
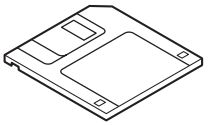
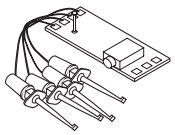
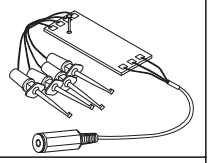
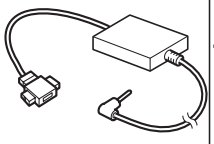
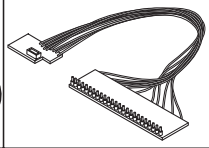
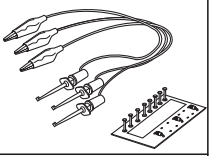
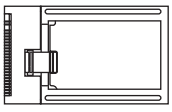
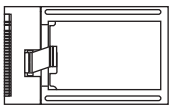
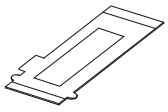
In the event of malfunction with electrical circuits, first find a defective portion with the aid of proper test instruments as shown in the following electrical adjustment procedure, and then commence necessary repair/ replacement/adjustment.

- In observing chip TP, use IC clips, etc. to avoid any stress. Prior to replacement of chip parts (especially IC), remove the solder completely to prevent peeling of the pattern.
- Use a patch cord if necessary. As for a patch cord, see the BOARD INTERCONNECTIONS.
- Since connectors are fragile, carefully handle them in disconnecting and connecting the FPC.

4.1.2 Required test equipment

- Personal computer (for Windows)
- Color TV monitor
- Oscilloscope (dual-trace type, observable 100MHz or higher frequency). The one observable 300 MHz or higher frequency is recommended.
- Digital voltmeter
- DC power supply or AC adapter
- Frequency counter (with threshold level adjuster)

4.1.3 Tools required for adjustment

Torque Driver YTU94088	Bit YTU94088-003	Tweezers P-895
		
Chip IC Replacement Jig PTS40844-2	Cleaning Cloth KSMM-01	INF Adjustment Lens YTU92001D
		
INF Adjustment Lens Holder YTU94087	Mini Stand YTU93108	Light Box Assembly YTU93096B
		
Gray Scale Chart YTU94133A	Color Bar Chart YTU94133C	Focus Chart YTU92001-018
		
Service Support System YTU94057-117	Communication Cable YTU93111-1	
		
PC Cable QAM0099-005	Jig Connector Cable YTU93106D	Charing Battery Adjuatment Jig YTU93112A
		
IDE Adapter YTU96041	IDE Adapter YTU96043	FPC Wire YTU94165-40
		

- **Torque Driver**
  Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.
- **Bit**
  This bit is slightly longer than those set in conventional torque drivers.
- **Tweezers**
  To be used for removing and installing parts and wires.

- **Chip IC Replacement Jig**
  To be used for adjustment of the camera system.
- **Cleaning Cloth**
  Recommended the Cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.
- **INF Adjustment Lens**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **INF Adjustment Lens Holder**
  To be used together with the Camera stand for operating the Videocamera in the stripped-down condition such as the status without the exterior parts or for using commodities that are not yet conformable to the interchangeable ring. For the usage of the INF lens holder, refer to the Service Bulletin No. YA-SB-10035.
- **Mini Stand**
  To be used together with the INF adjustment lens holder. For the usage of the Mini stand, refer to the Service Bulletin No. YA-SB-10035.
- **Light Box Assembly**
  To be used for adjustment of the camera system. For the usage of the Light box assembly, refer to the Service Bulletin No. YA-SB-10035.
- **Gray Scale Chart**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **Color Bar Chart**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **Focus Chart**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **Service Support System**
  To be used for adjustment with a personal computer. Software can be downloaded also from JS-net.
- **Communication Cable**
  Connect the Communication cable between the PC cable and Jig connector cable when performing a PC adjustment.
- **PC Cable**
  To be used to connect the Videocamera and a personal computer with each other when a personal computer issued for adjustment.
- **Jig Connector Cable**
  Connected to JIG CONNECTOR of the main board and used for electrical adjustment, etc.
- **Charging Battery Adjustment Jig**
  This Jig is used for the adjustment of the camcorders that have Main Body battery charging function.
- **IDE Adapter(YTU96041)**
  To be used for HDD test.
- **IDE Adapter(YTU96043)**
  To be used for HDD test.
- **FPC Wire**
  To be used for connecting the HDD to the IDE adapter.

4.2 JIG CONNECTOR CABLE CONNECTION

■ Connection procedure

NOTE

• Be sure to turn the power “OFF”, when connecting the JIG CONNECTOR CABLE.
If the JIG CONNECTOR CABLE is connected with the power “ON”, communication error may occur.

• Remove the 3 screws (1-3), and then remove the B.COVER ASSY.

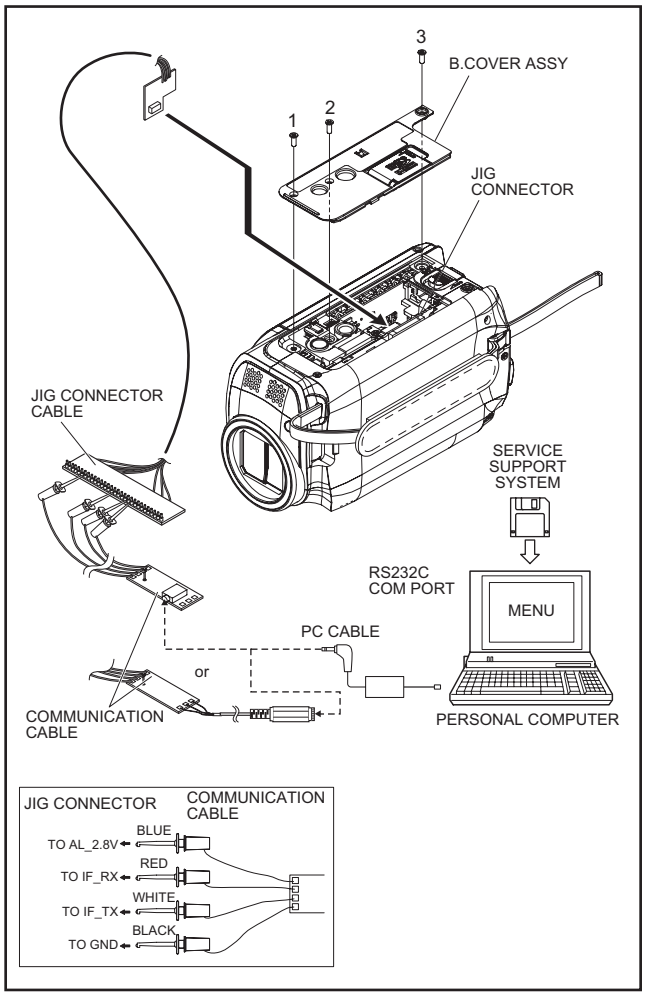


Fig.4-2-1

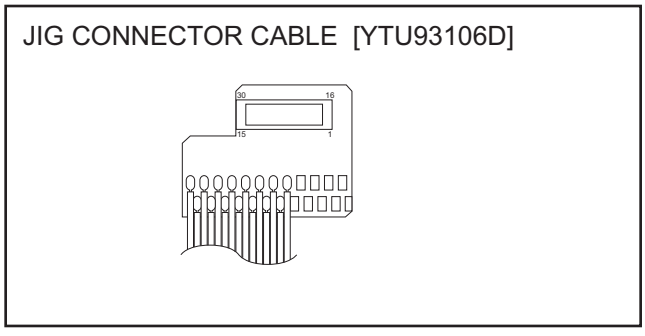


Fig.4-2-2

■ **Jig connector diagrams**

JIG CONNECTOR CABLE (YTU93106D)

MAIN CN110

DSP_TDO	1		
DSP_TCK		16	
DSP_TMS	2		
DSP_TDI		17	
XDSPTRST	3		
XDSPSRST		18	
REG_2.83V	4		
UARXD0		19	
UATXD0	5		
AL_2.8V		20	
IF_TX	6		
IF_RX		21	
NC	7		
SYS_RSTL		22	
OCD_SCL	8		
CAPSENS_DT		23	
NC	9		
GND		24	
OCD_SDA	10		
GND		25	
MVD	11		
IRU		26	
ISSP_DATA	12		
NC		27	
NC	13		
EXTRG0		28	
DSP_RTCK	14		
KENTO		29	
GND	15		
KENTO2		30	

JIG CONN. BOARD (PIN NO.)

1	DSP_TDO
2	DSP_TMS
3	XDSPTRST
4	REG_2.83V
5	UATXD0
6	IF_TX
7	NC
8	OCD_SCL
9	NC
10	OCD_SDA
11	MVD
12	ISSP_DATA
13	NC
14	DSP_RTCK
15	GND
16	DSP_TCK
17	DSP_TDI
18	XDSPSRST
19	UARXD0
20	AL_2.8V
21	IF_RX
22	SYS_RSTL
23	CAPSENS_DT
24	GND
25	GND
26	IRU
27	NC
28	EXTRG0
29	KENTO
30	KENTO2

Fig.4-2-3

4.3 IDE ADAPTER AND FPC WIRE

- IDE ADAPTER and FPC WIRE are used for HDD test.
  Check with the NOTE, and then refer to the below figure (Fig. 4-3-1, Fig.4-3-2) for the connection procedure.
  <TYPE-T>

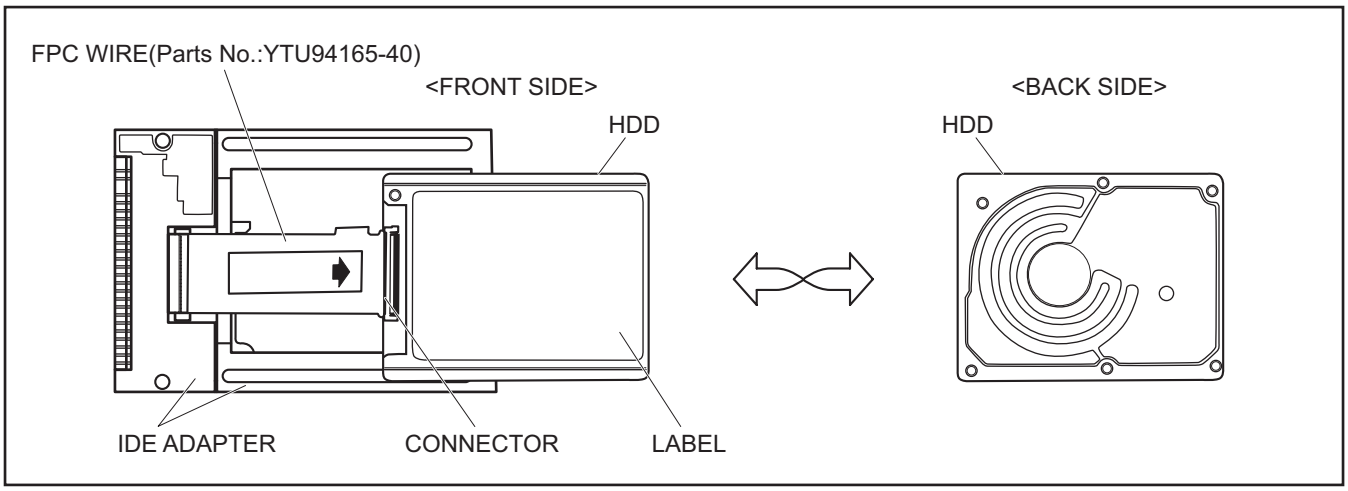


Fig.4-3-1

<TYPE-S>

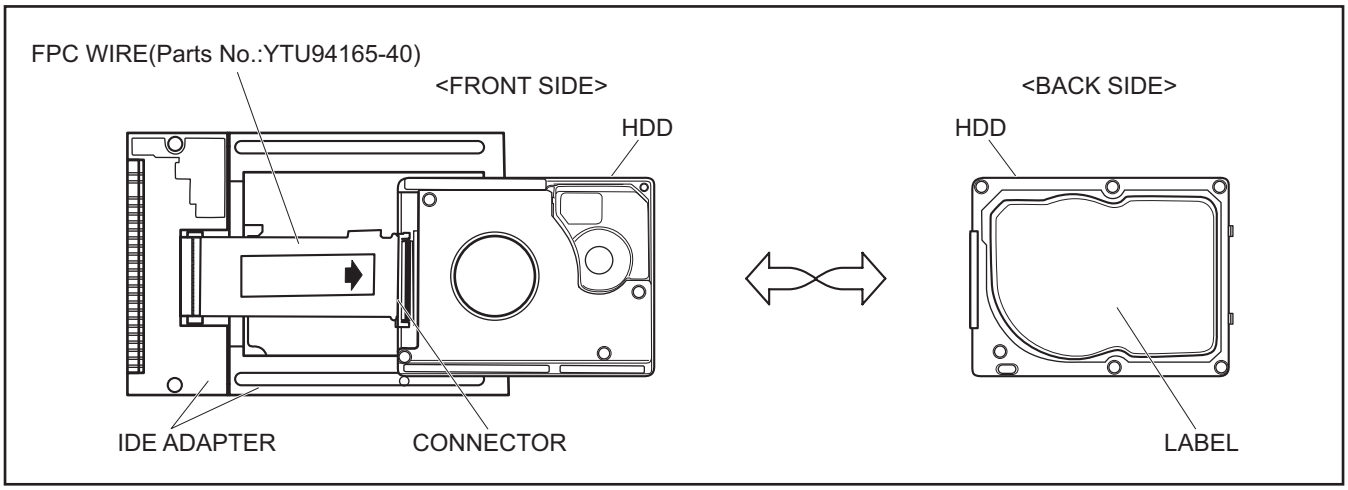


Fig.4-3-2

<NOTE>

- During the procedure, be careful in handling the parts. Pay special attention not to give any external shock to the HDD.
- There are two types of IDE ADAPTER (Parts Number: YTU96041, YTU96043). Either type can be used.
- Using the FPC WIRE originally used with this unit will damage the HDD.
  Use the FPC WIRE (Parts Number: YTU94165-40) to connect the IDE ADAPTER and the HDD.
  Connecting the FPC WIRE upside-down will damage the HDD.

CABINET PARTS AND ELECTRICAL PARTS(1)

Symbol No.	[1]			[2]		[3]					[4]				[5]	[6]					[7]	[8]	[9]		[10]		[11]	[12]
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	-	15	16	17	18	19	-	-	20	21	22	23	24	25
Place to stick screw	*	*	*	*	*	*	*	*	*				*	*	-	*	*	*			-	-	*	*	*	*		
Reference drawing (Fig.No.)	3-2-1			3-2-2		3-2-3					3-2-4				3-2-5	3-2-6					3-2-7	3-2-8	3-2-9		3-2-10		3-2-11	3-2-12
Screw tightening torque	a														-	a						-	a					

CABINET PARTS AND ELECTRICAL PARTS(2)

Symbol No.	[13]			[14]	[15]		[16]		[17]			[18]			[19]	[20]	[21]			[22]	[23]	
Removing order of screw	26	27	28	-	29	30	31	32	33	34	35	36	37	38	-	39	40	41	42	43	44	45
Place to stick screw	*	*	*	-	*	*	*	*				*			-		**				**	**
Reference drawing (Fig.No.)	3-2-13			3-2-14	3-2-15		3-2-16		3-2-17			3-2-18			3-2-19	3-2-20				3-2-21	3-2-22	
Screw tightening torque	a			-	a				b			a			-	a						

[14]OP BLOCK ASSY/CCD BOARD ASSY

Symbol No.	[17]									
Removing order of screw	1	2	3	4	5	6	7	8	9	10
Place to stick screw										
Reference drawing (Fig.No.)	3-2-23									
Screw tightening torque	c	d								

[20]MONITOR ASSY

[23]				
1	2	3	4	5
*	*	*	*	*
3-2-24				
b				a

NOTE:

1) * and ** (This mark shows where to attach the screws) : Do not reuse the screws because the screw lock bond was applied to prevent the screws from loosening. Prepare the specified screws and use them in place of the removed screws.

2) Tightening torque for the screws

- There are setting limits of the torque value for the torque driver. If the value exceeds the setting value, take it as a rough measurement (reference value), and tighten the screw manually.
- The specified torque value is a recommended value of the initial assembly. Therefore, set the value below the specified torque value in the assembling procedure. Be careful not to break either the screws or the screw holes.

a : 0.088N·m (0.9kgf·cm) b : 0.118N·m (1.2kgf·cm) c : 0.147N·m (1.5kgf·cm) d : 0.078N·m (0.8kgf·cm)

JVC

Victor Company of Japan, Limited
Camcorder Division 12, 3-chome, Moriya-cho, Kanagawa-ku, Yokohama-city, Kanagawa-prefecture, 221-8528, Japan

(No.YF307<Rev.003>)

Printed in Japan
VSE